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<151> 2002-10-08

<150> FR 0302439
<151> 2003-02-27

<150> US 60/493,490
<151> 2003-08-07

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gggtttccag acgttcacgc cgggtcccgt gcgcagcacc acgccggaca ggtcggaacc 7080

gaggatgtgg tacggcaggt cgtggcgcgc ggccagcggc gaggtgcgcc cgtagcgctc 7140

caggaagccg aacgtcggga ggggctcgaa gatggaggac cagaccgtgt tgtagttgac 7200

ggagctggcc atcaccgcga ccagcgcctc cccgggcccc acttcgggca gcggcacctc 7260

gtcgacgtgc agggacttgc gcgggtcctt gtccgcgctc ggcatcccgc ggaacatgtc 7320

ggtgtcctct ttgcggacgg tcacggcgcg gaaggactcg ggcaggggca gcgccgcgat 7380

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gtcctcgggg gtgcggtccg cggcggtgat cgcggcgagc agcgcgctct gcgcatggct    7440

ttcgggcatg gaacggtctc cgatcgctcg tgtcgtcagg tggcccggtg cagggcggtg    7500

aggcgctcca gggtggggat gatcccggcg ggcgtggggt cggcgagcat ctcctcgctc    7560

agccgccgcg cgcccgccct gatcgcgggg tcgtgcacgg ccgtgtgcac cgcgtcggcc    7620

agaccgcgcg ccgtgagcgt cgccgcgggc aggtcgaacc cggcggacag gcgctggagt    7680

tgctgcgcct tgagcggcgc gtcccacagg gagggcagca ggatctgcgg cactccgtgg    7740

cgcagggcgg tggaccaggt gcccgctccg ccgtggtgga tgatcgcggc gcagctcggc    7800

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gccgcggccg gcgtccggcg ggccctctcc cactcccccg gccggccgag cagccggtgg    9180

accgtgtgcg cgacggcggt gacgacgggt tcgggtgcgc cgaccgcgag gagcagcgcg    9240

atgcgctcga cgtcgccggg ggcgacgccg tcgtgcagga ggagggcgag cacgtcgtcg    9300
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ggccggggct cggcgttccc gaggccccgg gacttctccg cgacgagctc ggggaccagg   9360
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atccgggcgt cgagctgggg gccgcaggcg gcgagtgccc gcgcggcggt ggcgcggtcg   9480
cggcccggca ctccgaggag cctgagcatc agctcgacgg cgtagggccg ggcgacctcg   9540
ccgacaaggt cgaacccggc gtcaccggtg ggcagcaggc ggccgagcac tctgcgggcg   9600
gtggtgcgcg ccgcgcaggg cgcctgggcc ggggcgtacc ggctgagcac cggggcggcc   9660
agcgcccgca ggcgtacgag ctccgcgcgt tcgtggtggg ggaacgcctc ggcgaggggc   9720
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cgggtccggc gaggaggtag tgcacctcga tgcgggtggc gttcccctcc cgtacggagt  10380
gcgagacccg gcagacggtg cgctcgcccg cctccgtgat gctggcgccg acgtaaccgg  10440
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ccgcgatgtc gtcggcgtac atcagtgttt ccctccggtg agcggggcgg gaccgggctg  10920
gtgcgggagg ctgtccagcc attcgtgcac cagggacgcg gtgtgccggg cgtgttcggt  10980
gagcatggtg aagtggttgc cgggcacgtc ggcgacggtc cgtgcgaacg ggacctggga  11040
ccgccagtcg ccccgcgccc cgcccgcggg cggccacgcg cacaggggtt cggacgcccg  11100
ggccagcagg acgggggctt cgagggcggt gagccgggtt ccgagcacca gccgctgata  11160
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gccggccatg g                                                        11171


<210>  3
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<212>  DNA
<213>  Streptomyces ambofaciens


<220>
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<222>  (1)..(711)

<400>  3
atg tac gcc gac gac atc gcg gcc gtc tac gac ctg gtc cac gag ggg       48
Met Tyr Ala Asp Asp Ile Ala Ala Val Tyr Asp Leu Val His Glu Gly
1               5                   10                  15

aag ggg aag gac tac cgg cag gag gcc gag gag atc gcc gca ctc gtg       96
Lys Gly Lys Asp Tyr Arg Gln Glu Ala Glu Glu Ile Ala Ala Leu Val
            20                  25                  30

cgc gtc cac cgg ccg ggc gcc cgg acc ctg ctc gac gtg gcc tgc ggc      144
Arg Val His Arg Pro Gly Ala Arg Thr Leu Leu Asp Val Ala Cys Gly
        35                  40                  45

acc ggc cag cac ctg cac cac ctg gac ggc ctc ttc gac cac gtc gag      192
Thr Gly Gln His Leu His His Leu Asp Gly Leu Phe Asp His Val Glu
    50                  55                  60

ggc ctg gaa ctc tcc gcc gac atg ctg gcc ctc gcg acc ggc cgg aac      240
Gly Leu Glu Leu Ser Ala Asp Met Leu Ala Leu Ala Thr Gly Arg Asn
65                  70                  75                  80

ccc ggt gtc acc ttc cac caa ggg gac atg cgc tcg ttc tcc ctg gga      288
Pro Gly Val Thr Phe His Gln Gly Asp Met Arg Ser Phe Ser Leu Gly
                85                  90                  95

cgc cgg ttc gac gcg gtg acc tgc atg ttc agc tcc ata ggc cac ctg      336
Arg Arg Phe Asp Ala Val Thr Cys Met Phe Ser Ser Ile Gly His Leu
            100                 105                 110

cgg acc acc gac gaa ctc gac agc acg ctg cgg gcc ttc acc gac cac      384
Arg Thr Thr Asp Glu Leu Asp Ser Thr Leu Arg Ala Phe Thr Asp His
        115                 120                 125

ctc gaa ccg tcc ggc gtc atc gtc gtc gaa ccc tgg tgg ttc ccc gag      432
Leu Glu Pro Ser Gly Val Ile Val Val Glu Pro Trp Trp Phe Pro Glu
    130                 135                 140

tcc ttc acc ccc ggt tac gtc ggc gcc agc atc acg gag gcg ggc gag      480
Ser Phe Thr Pro Gly Tyr Val Gly Ala Ser Ile Thr Glu Ala Gly Glu
145                 150                 155                 160

cgc acc gtc tgc cgg gtc tcg cac tcc gta cgg gag ggg aac gcc acc      528
Arg Thr Val Cys Arg Val Ser His Ser Val Arg Glu Gly Asn Ala Thr
                165                 170                 175

cgc atc gag gtg cac tac ctc ctc gcc gga ccc ggc ggc gtc cgt cac      576
Arg Ile Glu Val His Tyr Leu Leu Ala Gly Pro Gly Gly Val Arg His
            180                 185                 190

ctg acc gag gac cac acc atc acc ctg ttc ccg cgc gcc gac tac gag      624
```

```
Leu Thr Glu Asp His Thr Ile Thr Leu Phe Pro Arg Ala Asp Tyr Glu
        195                 200                 205

gcg gcc ttc gag cgc gcc ggc tgc gac gtg gtc tac cag gaa ggc ggc        672
Ala Ala Phe Glu Arg Ala Gly Cys Asp Val Val Tyr Gln Glu Gly Gly
    210                 215                 220

ccg tcc ggt cgc ggg ctg ttc atc ggc acc cgc cgc tga                    711
Pro Ser Gly Arg Gly Leu Phe Ile Gly Thr Arg Arg
225                 230                 235


<210>  4
<211>  236
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  4

Met Tyr Ala Asp Asp Ile Ala Ala Val Tyr Asp Leu Val His Glu Gly
1               5                   10                  15


Lys Gly Lys Asp Tyr Arg Gln Glu Ala Glu Glu Ile Ala Ala Leu Val
            20                  25                  30


Arg Val His Arg Pro Gly Ala Arg Thr Leu Leu Asp Val Ala Cys Gly
        35                  40                  45


Thr Gly Gln His Leu His His Leu Asp Gly Leu Phe Asp His Val Glu
    50                  55                  60


Gly Leu Glu Leu Ser Ala Asp Met Leu Ala Leu Ala Thr Gly Arg Asn
65                  70                  75                  80


Pro Gly Val Thr Phe His Gln Gly Asp Met Arg Ser Phe Ser Leu Gly
                85                  90                  95


Arg Arg Phe Asp Ala Val Thr Cys Met Phe Ser Ser Ile Gly His Leu
            100                 105                 110


Arg Thr Thr Asp Glu Leu Asp Ser Thr Leu Arg Ala Phe Thr Asp His
        115                 120                 125


Leu Glu Pro Ser Gly Val Ile Val Val Glu Pro Trp Trp Phe Pro Glu
    130                 135                 140


Ser Phe Thr Pro Gly Tyr Val Gly Ala Ser Ile Thr Glu Ala Gly Glu
145                 150                 155                 160


Arg Thr Val Cys Arg Val Ser His Ser Val Arg Glu Gly Asn Ala Thr
                165                 170                 175
```

```
Arg Ile Glu Val His Tyr Leu Leu Ala Gly Pro Gly Gly Val Arg His
            180                 185                 190


Leu Thr Glu Asp His Thr Ile Thr Leu Phe Pro Arg Ala Asp Tyr Glu
        195                 200                 205


Ala Ala Phe Glu Arg Ala Gly Cys Asp Val Val Tyr Gln Glu Gly Gly
    210                 215                 220


Pro Ser Gly Arg Gly Leu Phe Ile Gly Thr Arg Arg
225                 230                 235


<210>  5
<211>  1272
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1272)

<400>  5
atg ccc acc ctt gcc acg gaa acg gcc ccc gcg agc acg agc acg agc        48
Met Pro Thr Leu Ala Thr Glu Thr Ala Pro Ala Ser Thr Ser Thr Ser
1               5                   10                  15

gcg gac acg agc acg ggc gtc cgt gcg ctc ggc cgt cgg ctc cag ctg        96
Ala Asp Thr Ser Thr Gly Val Arg Ala Leu Gly Arg Arg Leu Gln Leu
            20                  25                  30

acc cgg gcc gca cac tgg tgc gcc ggc aac cag ggc gac ccg tac gcg       144
Thr Arg Ala Ala His Trp Cys Ala Gly Asn Gln Gly Asp Pro Tyr Ala
        35                  40                  45

ctg atc ctg cgc gcc gtc gcc gac ccc gag ccg ttc gaa cgg gag atc       192
Leu Ile Leu Arg Ala Val Ala Asp Pro Glu Pro Phe Glu Arg Glu Ile
    50                  55                  60

cgg gcc cgc gga ccg tgg ttc cgc agc gaa cag ctg gac gcc tgg gtg       240
Arg Ala Arg Gly Pro Trp Phe Arg Ser Glu Gln Leu Asp Ala Trp Val
65                  70                  75                  80

acc gcg gac ccc gag gtg gcg gcg gcc gtc ctg gcc gac ccg cgc ttc       288
Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Ala Asp Pro Arg Phe
                85                  90                  95

ggc acg ctg gac cgg gcc gga cgc cgc ccg gac gag gaa ctg ctg ccc       336
Gly Thr Leu Asp Arg Ala Gly Arg Arg Pro Asp Glu Glu Leu Leu Pro
            100                 105                 110

ctc gcc gag gcg ttc ccc cac cac gaa cgc gcg gag ctc gta cgc ctg       384
Leu Ala Glu Ala Phe Pro His His Glu Arg Ala Glu Leu Val Arg Leu
        115                 120                 125

cgg gcg ctg gcc gcc ccg gtg ctc agc cgg tac gcc ccg gcc cag gcg       432
Arg Ala Leu Ala Ala Pro Val Leu Ser Arg Tyr Ala Pro Ala Gln Ala
    130                 135                 140
```

```
ccc tgc gcg gcg cgc acc acc gcc cgc aga gtg ctc ggc cgc ctg ctg       480
Pro Cys Ala Ala Arg Thr Thr Ala Arg Arg Val Leu Gly Arg Leu Leu
145                 150                 155                 160

ccc acc ggt gac gcc ggg ttc gac ctt gtc ggc gag gtc gcc cgg ccc       528
Pro Thr Gly Asp Ala Gly Phe Asp Leu Val Gly Glu Val Ala Arg Pro
                165                 170                 175

tac gcc gtc gag ctg atg ctc agg ctc ctc gga gtg ccg ggc cgc gac       576
Tyr Ala Val Glu Leu Met Leu Arg Leu Leu Gly Val Pro Gly Arg Asp
            180                 185                 190

cgc gcc acc gcc gcg cgg gca ctc gcc gcc tgc ggc ccc cag ctc gac       624
Arg Ala Thr Ala Ala Arg Ala Leu Ala Ala Cys Gly Pro Gln Leu Asp
        195                 200                 205

gcc cgg atg gcc ccg caa ctg ctg acc gtg gcc cgg gag tcc gcc gac       672
Ala Arg Met Ala Pro Gln Leu Leu Thr Val Ala Arg Glu Ser Ala Asp
    210                 215                 220

gcc gtc cgc aca ctg gcc gac ctg gtc ccc gag ctc gtc gcg gag aag       720
Ala Val Arg Thr Leu Ala Asp Leu Val Pro Glu Leu Val Ala Glu Lys
225                 230                 235                 240

tcc cgg ggc ctc ggg aac gcc gag ccc cgg ccc gac gac gtg ctc gcc       768
Ser Arg Gly Leu Gly Asn Ala Glu Pro Arg Pro Asp Asp Val Leu Ala
                245                 250                 255

ctc ctc ctg cac gac ggc gtc gcc ccc ggc gac gtc gag cgc atc gcg       816
Leu Leu Leu His Asp Gly Val Ala Pro Gly Asp Val Glu Arg Ile Ala
            260                 265                 270

ctg ctc ctc gcg gtc ggc gca ccc gaa ccc gtc gtc acc gcc gtc gcg       864
Leu Leu Leu Ala Val Gly Ala Pro Glu Pro Val Val Thr Ala Val Ala
        275                 280                 285

cac acg gtc cac cgg ctg ctc ggc cgg ccg ggg gag tgg gag agg gcc       912
His Thr Val His Arg Leu Leu Gly Arg Pro Gly Glu Trp Glu Arg Ala
    290                 295                 300

cgc cgg acg ccg gcc gcg gcg aac gcc gtc gac cag gtg ctg cgc gag       960
Arg Arg Thr Pro Ala Ala Ala Asn Ala Val Asp Gln Val Leu Arg Glu
305                 310                 315                 320

cgc ccc ccg gcc cgg ctg gag aac cgg gtc gcg cac acc ggc ctc gaa      1008
Arg Pro Pro Ala Arg Leu Glu Asn Arg Val Ala His Thr Gly Leu Glu
                325                 330                 335

ctc ggc ggc cgc cgg atc acc gcc gac gag cac gtc gtg gtg ctg gcc      1056
Leu Gly Gly Arg Arg Ile Thr Ala Asp Glu His Val Val Val Leu Ala
            340                 345                 350

gcc gcc gga cgg gag atc ccc ggg ccg gag ccg ctc ggg ggc gcc gac      1104
Ala Ala Gly Arg Glu Ile Pro Gly Pro Glu Pro Leu Gly Gly Ala Asp
        355                 360                 365

gga ccg cac ctg gcg ctc gcc ctc ccg ctg atc cgc ctg gcc gcc acc      1152
Gly Pro His Leu Ala Leu Ala Leu Pro Leu Ile Arg Leu Ala Ala Thr
    370                 375                 380

acc gcg gtc cag gtc acg gcc ggc cgc ctg ccc ggc ctg cgg gcc gag      1200
Thr Ala Val Gln Val Thr Ala Gly Arg Leu Pro Gly Leu Arg Ala Glu
385                 390                 395                 400
```

```
gga ccg ccc ctg acc cgg ccg cgg tca ccg gtc ctg ggc gcc tgc gcc       1248
Gly Pro Pro Leu Thr Arg Pro Arg Ser Pro Val Leu Gly Ala Cys Ala
                405                 410                 415

cgc ctc cgg gtc cac ccg gga tga                                       1272
Arg Leu Arg Val His Pro Gly
            420


<210>  6
<211>  423
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  6

Met Pro Thr Leu Ala Thr Glu Thr Ala Pro Ala Ser Thr Ser Thr Ser
1               5                   10                  15


Ala Asp Thr Ser Thr Gly Val Arg Ala Leu Gly Arg Arg Leu Gln Leu
            20                  25                  30


Thr Arg Ala Ala His Trp Cys Ala Gly Asn Gln Gly Asp Pro Tyr Ala
        35                  40                  45


Leu Ile Leu Arg Ala Val Ala Asp Pro Glu Pro Phe Glu Arg Glu Ile
    50                  55                  60


Arg Ala Arg Gly Pro Trp Phe Arg Ser Glu Gln Leu Asp Ala Trp Val
65                  70                  75                  80


Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Ala Asp Pro Arg Phe
                85                  90                  95


Gly Thr Leu Asp Arg Ala Gly Arg Arg Pro Asp Glu Glu Leu Leu Pro
            100                 105                 110


Leu Ala Glu Ala Phe Pro His His Glu Arg Ala Glu Leu Val Arg Leu
        115                 120                 125


Arg Ala Leu Ala Ala Pro Val Leu Ser Arg Tyr Ala Pro Ala Gln Ala
    130                 135                 140


Pro Cys Ala Ala Arg Thr Thr Ala Arg Arg Val Leu Gly Arg Leu Leu
145                 150                 155                 160


Pro Thr Gly Asp Ala Gly Phe Asp Leu Val Gly Glu Val Ala Arg Pro
                165                 170                 175


Tyr Ala Val Glu Leu Met Leu Arg Leu Leu Gly Val Pro Gly Arg Asp
            180                 185                 190
```

```
Arg Ala Thr Ala Ala Arg Ala Leu Ala Ala Cys Gly Pro Gln Leu Asp
        195                 200                 205

Ala Arg Met Ala Pro Gln Leu Leu Thr Val Ala Arg Glu Ser Ala Asp
    210                 215                 220

Ala Val Arg Thr Leu Ala Asp Leu Val Pro Glu Leu Val Ala Glu Lys
225                 230                 235                 240

Ser Arg Gly Leu Gly Asn Ala Glu Pro Arg Pro Asp Asp Val Leu Ala
                245                 250                 255

Leu Leu Leu His Asp Gly Val Ala Pro Gly Asp Val Glu Arg Ile Ala
            260                 265                 270

Leu Leu Leu Ala Val Gly Ala Pro Glu Pro Val Val Thr Ala Val Ala
        275                 280                 285

His Thr Val His Arg Leu Leu Gly Arg Pro Gly Glu Trp Glu Arg Ala
    290                 295                 300

Arg Arg Thr Pro Ala Ala Ala Asn Ala Val Asp Gln Val Leu Arg Glu
305                 310                 315                 320

Arg Pro Pro Ala Arg Leu Glu Asn Arg Val Ala His Thr Gly Leu Glu
                325                 330                 335

Leu Gly Gly Arg Arg Ile Thr Ala Asp Glu His Val Val Val Leu Ala
            340                 345                 350

Ala Ala Gly Arg Glu Ile Pro Gly Pro Glu Pro Leu Gly Gly Ala Asp
        355                 360                 365

Gly Pro His Leu Ala Leu Ala Leu Pro Leu Ile Arg Leu Ala Ala Thr
    370                 375                 380

Thr Ala Val Gln Val Thr Ala Gly Arg Leu Pro Gly Leu Arg Ala Glu
385                 390                 395                 400

Gly Pro Pro Leu Thr Arg Pro Arg Ser Pro Val Leu Gly Ala Cys Ala
                405                 410                 415

Arg Leu Arg Val His Pro Gly
            420


<210>  7
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<211>  1266
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1266)

<400>  7
gtg cgc gtc ctg ctg aca tcc ctc gcc cac aac acc cac tac tac agt       48
Val Arg Val Leu Leu Thr Ser Leu Ala His Asn Thr His Tyr Tyr Ser
1               5                   10                  15

ctg gtg ccc ctc gcc tgg gcg ctg cgc gcc gcc ggg cac gag gta cgg       96
Leu Val Pro Leu Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Arg
            20                  25                  30

gtg gcg agc ccg ccc tcc ctc acc gac gtc atc acc tcc acc ggc ctg      144
Val Ala Ser Pro Pro Ser Leu Thr Asp Val Ile Thr Ser Thr Gly Leu
        35                  40                  45

acc gcc gta ccg gtg ggc gac gac cga ccg gcc gcg gag ctg ctc gcc      192
Thr Ala Val Pro Val Gly Asp Asp Arg Pro Ala Ala Glu Leu Leu Ala
    50                  55                  60

gag atg ggc agc gac ctc gtc ccc tac cag cgg ggc ttc gag ttc ggt      240
Glu Met Gly Ser Asp Leu Val Pro Tyr Gln Arg Gly Phe Glu Phe Gly
65                  70                  75                  80

gag gtg gag agc gag gag gag acc acc tgg gag tac ctg ctc ggc cag      288
Glu Val Glu Ser Glu Glu Glu Thr Thr Trp Glu Tyr Leu Leu Gly Gln
                85                  90                  95

cag agc atg atg gcc gcc ctg tgc ttc gcc ccg ttc aac ggc gcc gcc      336
Gln Ser Met Met Ala Ala Leu Cys Phe Ala Pro Phe Asn Gly Ala Ala
            100                 105                 110

acg atg gac gag atc gtc gac ttc gcc cgt ggc tgg cgg ccc gac ctg      384
Thr Met Asp Glu Ile Val Asp Phe Ala Arg Gly Trp Arg Pro Asp Leu
        115                 120                 125

gtc gtg tgg gaa ccc tgg acc tac gcg ggg ccg gtc gcg gcc cgc gcc      432
Val Val Trp Glu Pro Trp Thr Tyr Ala Gly Pro Val Ala Ala Arg Ala
    130                 135                 140

tgc ggt gcc gcc cac gcg cgc atc ctg tgg ggc ccc gac gcc atc gga      480
Cys Gly Ala Ala His Ala Arg Ile Leu Trp Gly Pro Asp Ala Ile Gly
145                 150                 155                 160

cgc tcc cgc ctg cgc ttc ctc gcc gcc ctc gac ggg atg ccg gag gaa      528
Arg Ser Arg Leu Arg Phe Leu Ala Ala Leu Asp Gly Met Pro Glu Glu
                165                 170                 175

ctg cgc gag gac ccc atc gcc gaa tgg ctc ggc tgg acg ctg gac cgg      576
Leu Arg Glu Asp Pro Ile Ala Glu Trp Leu Gly Trp Thr Leu Asp Arg
            180                 185                 190

tac ggg ctc gcc ttc gac gaa cgc gac gtg ctc ggc cac tgg gtg atc      624
Tyr Gly Leu Ala Phe Asp Glu Arg Asp Val Leu Gly His Trp Val Ile
        195                 200                 205

gac ccg ggc ccg cgc agc acc cgc ctc gac ctg ggc cag acc acg gtg      672
```

```
Asp Pro Gly Pro Arg Ser Thr Arg Leu Asp Leu Gly Gln Thr Thr Val
    210                 215                 220

ccc atg tgc tac gtg ccc tac aac ggg cgc tcc gtg atc gaa ccc tgg        720
Pro Met Cys Tyr Val Pro Tyr Asn Gly Arg Ser Val Ile Glu Pro Trp
225                 230                 235                 240

ctc ggc aag aag ccc gac cgc ccc cgc gtc tgc ctc acc ctc ggc gtg        768
Leu Gly Lys Lys Pro Asp Arg Pro Arg Val Cys Leu Thr Leu Gly Val
                245                 250                 255

tcc gcc cgc gag acc tac ggc cgc gac gcg gtc tcc tac tcc gaa ctg        816
Ser Ala Arg Glu Thr Tyr Gly Arg Asp Ala Val Ser Tyr Ser Glu Leu
            260                 265                 270

ctg gag gcg ctc ggc cgg ctg gac atc gag gtg gtg gcc acc ctg gac        864
Leu Glu Ala Leu Gly Arg Leu Asp Ile Glu Val Val Ala Thr Leu Asp
        275                 280                 285

acc tcc cag ctc gac cgc ctg ggc acc ctc ccc gac aac gtc gtg ccc        912
Thr Ser Gln Leu Asp Arg Leu Gly Thr Leu Pro Asp Asn Val Val Pro
    290                 295                 300

gtg gac ttc gta ccg ctc gac gcg ctg ctg ccg agc tgc gcc gcg atc        960
Val Asp Phe Val Pro Leu Asp Ala Leu Leu Pro Ser Cys Ala Ala Ile
305                 310                 315                 320

atc cac cac ggc gga gcg ggc acc tgg tcc acc gcc ctg cgc cac gga       1008
Ile His His Gly Gly Ala Gly Thr Trp Ser Thr Ala Leu Arg His Gly
                325                 330                 335

gtg ccg cag atc ctg ctg ccc tcc ctg tgg gac gcg ccg ctc aag gcg       1056
Val Pro Gln Ile Leu Leu Pro Ser Leu Trp Asp Ala Pro Leu Lys Ala
            340                 345                 350

cag caa ctc cag cgc ctg tcc gcc ggg ttc gac ctg ccc gcg gcg acg       1104
Gln Gln Leu Gln Arg Leu Ser Ala Gly Phe Asp Leu Pro Ala Ala Thr
        355                 360                 365

ctc acg gcg cgc ggt ctg gcc gac gcg gtg cac acg gcc gtg cac gac       1152
Leu Thr Ala Arg Gly Leu Ala Asp Ala Val His Thr Ala Val His Asp
    370                 375                 380

ccc gcg atc agg gcg ggc gcg cgg cgg ctg agc gag gag atg ctc gcc       1200
Pro Ala Ile Arg Ala Gly Ala Arg Arg Leu Ser Glu Glu Met Leu Ala
385                 390                 395                 400

gac ccc acg ccc gcc ggg atc atc ccc acc ctg gag cgc ctc acc gcc       1248
Asp Pro Thr Pro Ala Gly Ile Ile Pro Thr Leu Glu Arg Leu Thr Ala
                405                 410                 415

ctg cac cgg gcc acc tga                                               1266
Leu His Arg Ala Thr
            420


<210>  8
<211>  421
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  8
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Val Arg Val Leu Leu Thr Ser Leu Ala His Asn Thr His Tyr Tyr Ser
1               5                   10                  15

Leu Val Pro Leu Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Arg
            20                  25                  30

Val Ala Ser Pro Pro Ser Leu Thr Asp Val Ile Thr Ser Thr Gly Leu
        35                  40                  45

Thr Ala Val Pro Val Gly Asp Asp Arg Pro Ala Ala Glu Leu Leu Ala
    50                  55                  60

Glu Met Gly Ser Asp Leu Val Pro Tyr Gln Arg Gly Phe Glu Phe Gly
65                  70                  75                  80

Glu Val Glu Ser Glu Glu Glu Thr Thr Trp Glu Tyr Leu Leu Gly Gln
                85                  90                  95

Gln Ser Met Met Ala Ala Leu Cys Phe Ala Pro Phe Asn Gly Ala Ala
            100                 105                 110

Thr Met Asp Glu Ile Val Asp Phe Ala Arg Gly Trp Arg Pro Asp Leu
        115                 120                 125

Val Val Trp Glu Pro Trp Thr Tyr Ala Gly Pro Val Ala Ala Arg Ala
    130                 135                 140

Cys Gly Ala Ala His Ala Arg Ile Leu Trp Gly Pro Asp Ala Ile Gly
145                 150                 155                 160

Arg Ser Arg Leu Arg Phe Leu Ala Ala Leu Asp Gly Met Pro Glu Glu
                165                 170                 175

Leu Arg Glu Asp Pro Ile Ala Glu Trp Leu Gly Trp Thr Leu Asp Arg
            180                 185                 190

Tyr Gly Leu Ala Phe Asp Glu Arg Asp Val Leu Gly His Trp Val Ile
        195                 200                 205

Asp Pro Gly Pro Arg Ser Thr Arg Leu Asp Leu Gly Gln Thr Thr Val
    210                 215                 220

Pro Met Cys Tyr Val Pro Tyr Asn Gly Arg Ser Val Ile Glu Pro Trp
225                 230                 235                 240

Leu Gly Lys Lys Pro Asp Arg Pro Arg Val Cys Leu Thr Leu Gly Val
                245                 250                 255
```

```
Ser Ala Arg Glu Thr Tyr Gly Arg Asp Ala Val Ser Tyr Ser Glu Leu
            260                 265                 270


Leu Glu Ala Leu Gly Arg Leu Asp Ile Glu Val Val Ala Thr Leu Asp
        275                 280                 285


Thr Ser Gln Leu Asp Arg Leu Gly Thr Leu Pro Asp Asn Val Val Pro
    290                 295                 300


Val Asp Phe Val Pro Leu Asp Ala Leu Leu Pro Ser Cys Ala Ala Ile
305                 310                 315                 320


Ile His His Gly Gly Ala Gly Thr Trp Ser Thr Ala Leu Arg His Gly
                325                 330                 335


Val Pro Gln Ile Leu Leu Pro Ser Leu Trp Asp Ala Pro Leu Lys Ala
            340                 345                 350


Gln Gln Leu Gln Arg Leu Ser Ala Gly Phe Asp Leu Pro Ala Ala Thr
        355                 360                 365


Leu Thr Ala Arg Gly Leu Ala Asp Ala Val His Thr Ala Val His Asp
    370                 375                 380


Pro Ala Ile Arg Ala Gly Ala Arg Arg Leu Ser Glu Glu Met Leu Ala
385                 390                 395                 400


Asp Pro Thr Pro Ala Gly Ile Ile Pro Thr Leu Glu Arg Leu Thr Ala
                405                 410                 415


Leu His Arg Ala Thr
            420


<210>  9
<211>  1350
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1350)

<400>  9
atg ccc gaa agc cat gcg cag agc gcg ctg ctc gcc gcg atc acc gcc        48
Met Pro Glu Ser His Ala Gln Ser Ala Leu Leu Ala Ala Ile Thr Ala
1               5                   10                  15

gcg gac cgc acc ccc gag gac atc gcg gcg ctg ccc ctg ccc gag tcc        96
Ala Asp Arg Thr Pro Glu Asp Ile Ala Ala Leu Pro Leu Pro Glu Ser
            20                  25                  30
```

```
ttc cgc gcc gtg acc gtc cgc aaa gag gac acc gac atg ttc cgc ggg          144
Phe Arg Ala Val Thr Val Arg Lys Glu Asp Thr Asp Met Phe Arg Gly
        35                  40                  45

atg ccg agc gcg gac aag gac ccg cgc aag tcc ctg cac gtc gac gag          192
Met Pro Ser Ala Asp Lys Asp Pro Arg Lys Ser Leu His Val Asp Glu
    50                  55                  60

gtg ccg ctg ccc gaa gtg ggg ccc ggg gag gcg ctg gtc gcg gtg atg          240
Val Pro Leu Pro Glu Val Gly Pro Gly Glu Ala Leu Val Ala Val Met
65                  70                  75                  80

gcc agc tcc gtc aac tac aac acg gtc tgg tcc tcc atc ttc gag ccc          288
Ala Ser Ser Val Asn Tyr Asn Thr Val Trp Ser Ser Ile Phe Glu Pro
                85                  90                  95

ctc ccg acg ttc ggc ttc ctg gag cgc tac ggg cgc acc tcg ccg ctg          336
Leu Pro Thr Phe Gly Phe Leu Glu Arg Tyr Gly Arg Thr Ser Pro Leu
            100                 105                 110

gcc gcg cgc cac gac ctg ccg tac cac atc ctc ggt tcc gac ctg tcc          384
Ala Ala Arg His Asp Leu Pro Tyr His Ile Leu Gly Ser Asp Leu Ser
        115                 120                 125

ggc gtg gtg ctg cgc acg gga ccc ggc gtg aac gtc tgg aaa ccc ggt          432
Gly Val Val Leu Arg Thr Gly Pro Gly Val Asn Val Trp Lys Pro Gly
    130                 135                 140

gac gag gtc gtc gcg cac tgt ctg tcg gtg gag ctg gag agc ccc gac          480
Asp Glu Val Val Ala His Cys Leu Ser Val Glu Leu Glu Ser Pro Asp
145                 150                 155                 160

ggg cac gac gac acc atg ctc gac ccg gcc cag cgc atc tgg ggc ttc          528
Gly His Asp Asp Thr Met Leu Asp Pro Ala Gln Arg Ile Trp Gly Phe
                165                 170                 175

gag acc aac ttc ggg ggc ctg gcc gag gtg gcc ctc gtc aag tcc aac          576
Glu Thr Asn Phe Gly Gly Leu Ala Glu Val Ala Leu Val Lys Ser Asn
            180                 185                 190

cag ctg atg ccc aag gcg gcc cat ctg acc tgg gag gag gcc gcc gcg          624
Gln Leu Met Pro Lys Ala Ala His Leu Thr Trp Glu Glu Ala Ala Ala
        195                 200                 205

ccc ggt ctg gtc aac tcc acc gcc tac cgc cag ctg gtc tcc cgc aac          672
Pro Gly Leu Val Asn Ser Thr Ala Tyr Arg Gln Leu Val Ser Arg Asn
    210                 215                 220

ggc gcc ggc atg aag cag ggc gac aac gtg ctg atc tgg ggc gcc agc          720
Gly Ala Gly Met Lys Gln Gly Asp Asn Val Leu Ile Trp Gly Ala Ser
225                 230                 235                 240

ggc ggc ctg ggc tcg tac gcc acc cag ctg gcc ctc gcc ggc ggg gcc          768
Gly Gly Leu Gly Ser Tyr Ala Thr Gln Leu Ala Leu Ala Gly Gly Ala
                245                 250                 255

cac ccc gtc tgc gtg gtc tcc agc gcg cgc aag gcc gag gtg tgc cgg          816
His Pro Val Cys Val Val Ser Ser Ala Arg Lys Ala Glu Val Cys Arg
            260                 265                 270

gcc atg ggc gcg gag gcc atc atc gac cgc tcc gcc gag gac tac cgc          864
Ala Met Gly Ala Glu Ala Ile Ile Asp Arg Ser Ala Glu Asp Tyr Arg
```

```
        275                 280                 285

ttc tgg agc gac gag gac acc cag gac ccg cgg gag tgg aag cgc ttc      912
Phe Trp Ser Asp Glu Asp Thr Gln Asp Pro Arg Glu Trp Lys Arg Phe
    290                 295                 300

ggc aag cgc atc cgc gag gtc acc ggg ggc gag gac gtc gac atc gtc      960
Gly Lys Arg Ile Arg Glu Val Thr Gly Gly Glu Asp Val Asp Ile Val
305                 310                 315                 320

ttc gag cac ccc ggc cgg gag acc ttc ggg gcg tcc gtc tac gtc acc     1008
Phe Glu His Pro Gly Arg Glu Thr Phe Gly Ala Ser Val Tyr Val Thr
                325                 330                 335

cgc agg ggc ggc acg atc gtc acc tgc gcc tcc acc tcg ggc ttc cgc     1056
Arg Arg Gly Gly Thr Ile Val Thr Cys Ala Ser Thr Ser Gly Phe Arg
            340                 345                 350

cac gag ttc gac aac cgc tac ctc tgg atg cac ctc aag cgt atc gtc     1104
His Glu Phe Asp Asn Arg Tyr Leu Trp Met His Leu Lys Arg Ile Val
        355                 360                 365

ggc acc cac ttc gcc aac tac cgc gag gcg tgg gag gcg aac cgg ctc     1152
Gly Thr His Phe Ala Asn Tyr Arg Glu Ala Trp Glu Ala Asn Arg Leu
    370                 375                 380

gtc gcc aag ggg agg atc cac ccc acc ctc tcg cgc acc tac ccg ctg     1200
Val Ala Lys Gly Arg Ile His Pro Thr Leu Ser Arg Thr Tyr Pro Leu
385                 390                 395                 400

gcc gac acg gcg gtt gcc gtg cac gac gtg cac ggc aac cag cac cag     1248
Ala Asp Thr Ala Val Ala Val His Asp Val His Gly Asn Gln His Gln
                405                 410                 415

ggc aag gtc ggc gtg ctc tgc ctg gcg ccc acg gag ggg ctg ggc gtg     1296
Gly Lys Val Gly Val Leu Cys Leu Ala Pro Thr Glu Gly Leu Gly Val
            420                 425                 430

cgc gac gag gag aag cgg gcg cgg cac atc gac gcg atc aac cgg ttc     1344
Arg Asp Glu Glu Lys Arg Ala Arg His Ile Asp Ala Ile Asn Arg Phe
        435                 440                 445

cgc tga                                                             1350
Arg


<210>  10
<211>  449
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  10

Met Pro Glu Ser His Ala Gln Ser Ala Leu Leu Ala Ala Ile Thr Ala
1               5                   10                  15


Ala Asp Arg Thr Pro Glu Asp Ile Ala Ala Leu Pro Leu Pro Glu Ser
            20                  25                  30


Phe Arg Ala Val Thr Val Arg Lys Glu Asp Thr Asp Met Phe Arg Gly
```

```
        35                  40                  45


Met Pro Ser Ala Asp Lys Asp Pro Arg Lys Ser Leu His Val Asp Glu
    50                  55                  60


Val Pro Leu Pro Glu Val Gly Pro Gly Glu Ala Leu Val Ala Val Met
65                  70                  75                  80


Ala Ser Ser Val Asn Tyr Asn Thr Val Trp Ser Ser Ile Phe Glu Pro
                85                  90                  95


Leu Pro Thr Phe Gly Phe Leu Glu Arg Tyr Gly Arg Thr Ser Pro Leu
            100                 105                 110


Ala Ala Arg His Asp Leu Pro Tyr His Ile Leu Gly Ser Asp Leu Ser
        115                 120                 125


Gly Val Val Leu Arg Thr Gly Pro Gly Val Asn Val Trp Lys Pro Gly
    130                 135                 140


Asp Glu Val Val Ala His Cys Leu Ser Val Glu Leu Glu Ser Pro Asp
145                 150                 155                 160


Gly His Asp Asp Thr Met Leu Asp Pro Ala Gln Arg Ile Trp Gly Phe
                165                 170                 175


Glu Thr Asn Phe Gly Gly Leu Ala Glu Val Ala Leu Val Lys Ser Asn
            180                 185                 190


Gln Leu Met Pro Lys Ala Ala His Leu Thr Trp Glu Glu Ala Ala Ala
        195                 200                 205


Pro Gly Leu Val Asn Ser Thr Ala Tyr Arg Gln Leu Val Ser Arg Asn
    210                 215                 220


Gly Ala Gly Met Lys Gln Gly Asp Asn Val Leu Ile Trp Gly Ala Ser
225                 230                 235                 240


Gly Gly Leu Gly Ser Tyr Ala Thr Gln Leu Ala Leu Ala Gly Gly Ala
                245                 250                 255


His Pro Val Cys Val Val Ser Ser Ala Arg Lys Ala Glu Val Cys Arg
            260                 265                 270


Ala Met Gly Ala Glu Ala Ile Ile Asp Arg Ser Ala Glu Asp Tyr Arg
        275                 280                 285
```

```
Phe Trp Ser Asp Glu Asp Thr Gln Asp Pro Arg Glu Trp Lys Arg Phe
    290                 295                 300


Gly Lys Arg Ile Arg Glu Val Thr Gly Gly Glu Asp Val Asp Ile Val
305                 310                 315                 320


Phe Glu His Pro Gly Arg Glu Thr Phe Gly Ala Ser Val Tyr Val Thr
                325                 330                 335


Arg Arg Gly Gly Thr Ile Val Thr Cys Ala Ser Thr Ser Gly Phe Arg
            340                 345                 350


His Glu Phe Asp Asn Arg Tyr Leu Trp Met His Leu Lys Arg Ile Val
        355                 360                 365


Gly Thr His Phe Ala Asn Tyr Arg Glu Ala Trp Glu Ala Asn Arg Leu
    370                 375                 380


Val Ala Lys Gly Arg Ile His Pro Thr Leu Ser Arg Thr Tyr Pro Leu
385                 390                 395                 400


Ala Asp Thr Ala Val Ala Val His Asp Val His Gly Asn Gln His Gln
                405                 410                 415


Gly Lys Val Gly Val Leu Cys Leu Ala Pro Thr Glu Gly Leu Gly Val
            420                 425                 430


Arg Asp Glu Glu Lys Arg Ala Arg His Ile Asp Ala Ile Asn Arg Phe
        435                 440                 445


Arg


<210>  11
<211>  675
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(675)

<400>  11
atg atg agc gtg gca gac cag acg gct ctc agc ccc gcg ctg ctg gag        48
Met Met Ser Val Ala Asp Gln Thr Ala Leu Ser Pro Ala Leu Leu Glu
1               5                   10                  15

tac gcc cgg agc gtc gcg ctg cgg gac gac ggc ctg ctg cgc gaa ctg        96
Tyr Ala Arg Ser Val Ala Leu Arg Asp Asp Gly Leu Leu Arg Glu Leu
            20                  25                  30
```

```
cac gag gtg acc gcc ggg ctc ccc ggc ggc cgg gcc atg cag atc atg       144
His Glu Val Thr Ala Gly Leu Pro Gly Gly Arg Ala Met Gln Ile Met
        35                  40                  45

ccc gag gag gcg cag ttc ctc gcc ctg ctg atc cgg ctc gtc ggt gcc       192
Pro Glu Glu Ala Gln Phe Leu Ala Leu Leu Ile Arg Leu Val Gly Ala
    50                  55                  60

cgg cgg gtg ctg gag atc ggc acc ttc acg ggg tac agc acg ctg tgc       240
Arg Arg Val Leu Glu Ile Gly Thr Phe Thr Gly Tyr Ser Thr Leu Cys
65                  70                  75                  80

atg gcg cgg gca ctg ccc gcc gac ggc acc gtc gtc acc tgc gac atc       288
Met Ala Arg Ala Leu Pro Ala Asp Gly Thr Val Val Thr Cys Asp Ile
                85                  90                  95

agc gac agg tgg ccc ggc gtc ggc gca ccg tac tgg cgc cgg gcc ggg       336
Ser Asp Arg Trp Pro Gly Val Gly Ala Pro Tyr Trp Arg Arg Ala Gly
            100                 105                 110

gtg gag tcc cgg atc gac ctg cgc gtc ggc gac gcc gtc cgg acc ctc       384
Val Glu Ser Arg Ile Asp Leu Arg Val Gly Asp Ala Val Arg Thr Leu
        115                 120                 125

gcc gag ctc cgc gag cac gag ggg gac ggc tcg ttc gac ctg gtc ttc       432
Ala Glu Leu Arg Glu His Glu Gly Asp Gly Ser Phe Asp Leu Val Phe
    130                 135                 140

gtc gac gcc gac aag acc ggg tac ccg cac tac tac gag cag gcg ctg       480
Val Asp Ala Asp Lys Thr Gly Tyr Pro His Tyr Tyr Glu Gln Ala Leu
145                 150                 155                 160

gcc ctg gta cgc ccc ggc gga ctg gtg gcg gtc gac aac acc ctg ttc       528
Ala Leu Val Arg Pro Gly Gly Leu Val Ala Val Asp Asn Thr Leu Phe
                165                 170                 175

ttc ggc cgg gtg gcc gac ccg gcc gtc gag gac gcc gac acc gtc gcc       576
Phe Gly Arg Val Ala Asp Pro Ala Val Glu Asp Ala Asp Thr Val Ala
            180                 185                 190

gtg cgc gcg ctc aac gag ctg ctg cgc gac gac gaa cgc gtg gac atc       624
Val Arg Ala Leu Asn Glu Leu Leu Arg Asp Asp Glu Arg Val Asp Ile
        195                 200                 205

gcc ctg ctg acg gtc gcc gac ggg atc act ctg gcc cgc cgg cgg gag       672
Ala Leu Leu Thr Val Ala Asp Gly Ile Thr Leu Ala Arg Arg Arg Glu
    210                 215                 220

tga                                                                   675


<210>  12
<211>  224
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  12

Met Met Ser Val Ala Asp Gln Thr Ala Leu Ser Pro Ala Leu Leu Glu
1               5                   10                  15


Tyr Ala Arg Ser Val Ala Leu Arg Asp Asp Gly Leu Leu Arg Glu Leu
```

```
            20                  25                  30

His Glu Val Thr Ala Gly Leu Pro Gly Gly Arg Ala Met Gln Ile Met
        35                  40                  45

Pro Glu Glu Ala Gln Phe Leu Ala Leu Leu Ile Arg Leu Val Gly Ala
    50                  55                  60

Arg Arg Val Leu Glu Ile Gly Thr Phe Thr Gly Tyr Ser Thr Leu Cys
65                  70                  75                  80

Met Ala Arg Ala Leu Pro Ala Asp Gly Thr Val Val Thr Cys Asp Ile
                85                  90                  95

Ser Asp Arg Trp Pro Gly Val Gly Ala Pro Tyr Trp Arg Arg Ala Gly
            100                 105                 110

Val Glu Ser Arg Ile Asp Leu Arg Val Gly Asp Ala Val Arg Thr Leu
        115                 120                 125

Ala Glu Leu Arg Glu His Glu Gly Asp Gly Ser Phe Asp Leu Val Phe
    130                 135                 140

Val Asp Ala Asp Lys Thr Gly Tyr Pro His Tyr Tyr Glu Gln Ala Leu
145                 150                 155                 160

Ala Leu Val Arg Pro Gly Gly Leu Val Ala Val Asp Asn Thr Leu Phe
                165                 170                 175

Phe Gly Arg Val Ala Asp Pro Ala Val Glu Asp Ala Asp Thr Val Ala
            180                 185                 190

Val Arg Ala Leu Asn Glu Leu Leu Arg Asp Asp Glu Arg Val Asp Ile
        195                 200                 205

Ala Leu Leu Thr Val Ala Asp Gly Ile Thr Leu Ala Arg Arg Arg Glu
    210                 215                 220

<210>  13
<211>  1245
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1245)

<400>  13
gtg ctc cag cgc gtc gat ctg tcg tca ctc acc ggc ctc cgc tgg tat       48
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Val Leu Gln Arg Val Asp Leu Ser Ser Leu Thr Gly Leu Arg Trp Tyr
1               5                   10                  15

gcg gcg ctg acg gta ttc gcc tgt cac atc gcc cag cag ggc ttc ttc         96
Ala Ala Leu Thr Val Phe Ala Cys His Ile Ala Gln Gln Gly Phe Phe
            20                  25                  30

gcc gac cag cag gtg ggc agc gca ctg ctg cac atc acc ccg ctc ggt        144
Ala Asp Gln Gln Val Gly Ser Ala Leu Leu His Ile Thr Pro Leu Gly
        35                  40                  45

tcc atg gcg gtc tcg atc ttc ttc ata ctg agt gga ttc gtc ctc gcc        192
Ser Met Ala Val Ser Ile Phe Phe Ile Leu Ser Gly Phe Val Leu Ala
    50                  55                  60

tgg tcg gcc cgc gac gag gac tcc gtg ccg act ttc tgg cgg cgc cgc        240
Trp Ser Ala Arg Asp Glu Asp Ser Val Pro Thr Phe Trp Arg Arg Arg
65                  70                  75                  80

atc gcg aag atc tat ccg ctg cat ctc gcg acg ttc ggc atc gcg gct        288
Ile Ala Lys Ile Tyr Pro Leu His Leu Ala Thr Phe Gly Ile Ala Ala
                85                  90                  95

ctc atc att ttc tcc ctg tcg gag ccg gta ctt ccc ggc ggt tcc gta        336
Leu Ile Ile Phe Ser Leu Ser Glu Pro Val Leu Pro Gly Gly Ser Val
            100                 105                 110

tgg gac ggg ctg gtg ccc aat gtt ctg ctc gtg cag tcc tgg ctt ccc        384
Trp Asp Gly Leu Val Pro Asn Val Leu Leu Val Gln Ser Trp Leu Pro
        115                 120                 125

gac gcg acc ctc acg gcc agt ttc aac acg ccc agc tgg tcg ctc tcc        432
Asp Ala Thr Leu Thr Ala Ser Phe Asn Thr Pro Ser Trp Ser Leu Ser
    130                 135                 140

tgt gag atc gcc ttc tat ctg tcg ttc ccg ctg tgg tac cgg ctg gtg        480
Cys Glu Ile Ala Phe Tyr Leu Ser Phe Pro Leu Trp Tyr Arg Leu Val
145                 150                 155                 160

cgc agg att ccc gca cgg cgg ctg tgg tgg tgc gcc gcg ggg atc gcc        528
Arg Arg Ile Pro Ala Arg Arg Leu Trp Trp Cys Ala Ala Gly Ile Ala
                165                 170                 175

gtg gcc gtg acg tgt gtg ccc ctg ctg gcg ggc ctg ctc ccg gcg agc        576
Val Ala Val Thr Cys Val Pro Leu Leu Ala Gly Leu Leu Pro Ala Ser
            180                 185                 190

gag gag gtg gcc ccc ggg atg tcg ctc aac gag gtc tgg ttc gcg tac        624
Glu Glu Val Ala Pro Gly Met Ser Leu Asn Glu Val Trp Phe Ala Tyr
        195                 200                 205

tgg ctt ccg ccg gtg cgc atg ctg gag ttc gtc ctc ggc atc gtg atg        672
Trp Leu Pro Pro Val Arg Met Leu Glu Phe Val Leu Gly Ile Val Met
    210                 215                 220

gcg ctg atc ctg cgc gcg ggg atc tgg aag ggc ccc ggt ccg gcg gtc        720
Ala Leu Ile Leu Arg Ala Gly Ile Trp Lys Gly Pro Gly Pro Ala Val
225                 230                 235                 240

tgc acg gcg ctc ctc gcc gcg agt tac ggc ctc acc cag atg gtg ccc        768
Cys Thr Ala Leu Leu Ala Ala Ser Tyr Gly Leu Thr Gln Met Val Pro
                245                 250                 255
```

```
ccg atc ttc acc ctc gtc gcc tgc tcc gtc gta ccg gcc gcg ctg ctg         816
Pro Ile Phe Thr Leu Val Ala Cys Ser Val Val Pro Ala Ala Leu Leu
            260                 265                 270

atc acg gcg ctg gcc gac gcc gac gtg cac ggc cgg cgc acg ggg ctg         864
Ile Thr Ala Leu Ala Asp Ala Asp Val His Gly Arg Arg Thr Gly Leu
        275                 280                 285

cgt tcg gcg acg ctg gtg cgg ctg ggc cag tgg tcc ttc gcc ttc tac         912
Arg Ser Ala Thr Leu Val Arg Leu Gly Gln Trp Ser Phe Ala Phe Tyr
    290                 295                 300

ctg gtc cac ttc ctg atc atc cgc tac gga cac cgg ctg atg ggc ggc         960
Leu Val His Phe Leu Ile Ile Arg Tyr Gly His Arg Leu Met Gly Gly
305                 310                 315                 320

gat ctg ggc tac gag cgg cag tgg agc acc ccg gcc gcg atc gcg ctg        1008
Asp Leu Gly Tyr Glu Arg Gln Trp Ser Thr Pro Ala Ala Ile Ala Leu
                325                 330                 335

tcc ctg ggg atg ctg ggg gtg gcg gtc ctg gcc ggc ggt ctg ctg cac        1056
Ser Leu Gly Met Leu Gly Val Ala Val Leu Ala Gly Gly Leu Leu His
            340                 345                 350

acc gtc gtc gaa cag ccc tgc atg cgc ctg ttc ggc agc cgc agg tcc        1104
Thr Val Val Glu Gln Pro Cys Met Arg Leu Phe Gly Ser Arg Arg Ser
        355                 360                 365

gcc tcc cgt ccg aag ccc ggc gcc acc gcg gct ccc cgg aac tca ccc        1152
Ala Ser Arg Pro Lys Pro Gly Ala Thr Ala Ala Pro Arg Asn Ser Pro
    370                 375                 380

gcg gcc gac gcg gcc ggc gtg ccc ctg ctc ccg ggc gta ccc ggg ccc        1200
Ala Ala Asp Ala Ala Gly Val Pro Leu Leu Pro Gly Val Pro Gly Pro
385                 390                 395                 400

gcg cac acc ccc gca gcg acg aac gaa ccc acc ccg aga gga tga            1245
Ala His Thr Pro Ala Ala Thr Asn Glu Pro Thr Pro Arg Gly
                405                 410


<210>  14
<211>  414
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  14

Val Leu Gln Arg Val Asp Leu Ser Ser Leu Thr Gly Leu Arg Trp Tyr
1               5                   10                  15


Ala Ala Leu Thr Val Phe Ala Cys His Ile Ala Gln Gln Gly Phe Phe
            20                  25                  30


Ala Asp Gln Gln Val Gly Ser Ala Leu Leu His Ile Thr Pro Leu Gly
        35                  40                  45


Ser Met Ala Val Ser Ile Phe Phe Ile Leu Ser Gly Phe Val Leu Ala
    50                  55                  60
```

```
Trp Ser Ala Arg Asp Glu Asp Ser Val Pro Thr Phe Trp Arg Arg Arg
65                  70                  75                  80

Ile Ala Lys Ile Tyr Pro Leu His Leu Ala Thr Phe Gly Ile Ala Ala
                85                  90                  95

Leu Ile Ile Phe Ser Leu Ser Glu Pro Val Leu Pro Gly Gly Ser Val
            100                 105                 110

Trp Asp Gly Leu Val Pro Asn Val Leu Leu Val Gln Ser Trp Leu Pro
        115                 120                 125

Asp Ala Thr Leu Thr Ala Ser Phe Asn Thr Pro Ser Trp Ser Leu Ser
    130                 135                 140

Cys Glu Ile Ala Phe Tyr Leu Ser Phe Pro Leu Trp Tyr Arg Leu Val
145                 150                 155                 160

Arg Arg Ile Pro Ala Arg Arg Leu Trp Trp Cys Ala Ala Gly Ile Ala
                165                 170                 175

Val Ala Val Thr Cys Val Pro Leu Leu Ala Gly Leu Leu Pro Ala Ser
            180                 185                 190

Glu Glu Val Ala Pro Gly Met Ser Leu Asn Glu Val Trp Phe Ala Tyr
        195                 200                 205

Trp Leu Pro Pro Val Arg Met Leu Glu Phe Val Leu Gly Ile Val Met
    210                 215                 220

Ala Leu Ile Leu Arg Ala Gly Ile Trp Lys Gly Pro Gly Pro Ala Val
225                 230                 235                 240

Cys Thr Ala Leu Leu Ala Ala Ser Tyr Gly Leu Thr Gln Met Val Pro
                245                 250                 255

Pro Ile Phe Thr Leu Val Ala Cys Ser Val Val Pro Ala Ala Leu Leu
            260                 265                 270

Ile Thr Ala Leu Ala Asp Ala Asp Val His Gly Arg Arg Thr Gly Leu
        275                 280                 285

Arg Ser Ala Thr Leu Val Arg Leu Gly Gln Trp Ser Phe Ala Phe Tyr
    290                 295                 300

Leu Val His Phe Leu Ile Ile Arg Tyr Gly His Arg Leu Met Gly Gly
305                 310                 315                 320
```

```
Asp Leu Gly Tyr Glu Arg Gln Trp Ser Thr Pro Ala Ala Ile Ala Leu
                325                 330                 335

Ser Leu Gly Met Leu Gly Val Ala Val Leu Ala Gly Gly Leu Leu His
            340                 345                 350

Thr Val Val Glu Gln Pro Cys Met Arg Leu Phe Gly Ser Arg Arg Ser
        355                 360                 365

Ala Ser Arg Pro Lys Pro Gly Ala Thr Ala Ala Pro Arg Asn Ser Pro
    370                 375                 380

Ala Ala Asp Ala Ala Gly Val Pro Leu Leu Pro Gly Val Pro Gly Pro
385                 390                 395                 400

Ala His Thr Pro Ala Ala Thr Asn Glu Pro Thr Pro Arg Gly
                405                 410


<210>  15
<211>  849
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(849)

<400>  15
gtg aca ttg aaa tcc cca ctg cca ccg caa tcc gtc tcc gca ccc gct          48
Val Thr Leu Lys Ser Pro Leu Pro Pro Gln Ser Val Ser Ala Pro Ala
1               5                   10                  15

gat tca cgc agc acc gcg cgg aga gaa tgg ggt cag aac ttc ttt cgt          96
Asp Ser Arg Ser Thr Ala Arg Arg Glu Trp Gly Gln Asn Phe Phe Arg
            20                  25                  30

aca gcc gcc gcg gcc tgt cgt ttc tcc gct cag ctg gac ggt tcg gac         144
Thr Ala Ala Ala Ala Cys Arg Phe Ser Ala Gln Leu Asp Gly Ser Asp
        35                  40                  45

acc att ccg ccc gat tct ccg aat gac ctg atg acc gtc gaa ata ggc         192
Thr Ile Pro Pro Asp Ser Pro Asn Asp Leu Met Thr Val Glu Ile Gly
    50                  55                  60

gcg gga tca ggg cgg gtg acc aaa gtg ctc gcc tca ccc ggg acg cct         240
Ala Gly Ser Gly Arg Val Thr Lys Val Leu Ala Ser Pro Gly Thr Pro
65                  70                  75                  80

tta ctc gcg gtg gaa ata gat ccc cgc tgg gct cgg cgg ctg gcc gcc         288
Leu Leu Ala Val Glu Ile Asp Pro Arg Trp Ala Arg Arg Leu Ala Ala
                85                  90                  95

gaa tcg ctg ccg gac gtc acg gtg gtg aac gag gat ttc ctg acc ctg         336
Glu Ser Leu Pro Asp Val Thr Val Val Asn Glu Asp Phe Leu Thr Leu
```

```
            100                 105                 110

caa ctg ccc ggg cag ccg gtc aga ctc atc ggg aat ctt ccc ttc gtc        384
Gln Leu Pro Gly Gln Pro Val Arg Leu Ile Gly Asn Leu Pro Phe Val
        115                 120                 125

acc ggc acc aga atg ctg agg cgc tgc ctc gac atg ggt ccg gcg cgc        432
Thr Gly Thr Arg Met Leu Arg Arg Cys Leu Asp Met Gly Pro Ala Arg
    130                 135                 140

atg cgg cag ggc gtg ttc ctg ttg cag cgg gag tac gtg gga aag cgg        480
Met Arg Gln Gly Val Phe Leu Leu Gln Arg Glu Tyr Val Gly Lys Arg
145                 150                 155                 160

acc gga gcc tgg ggc gga aac ctc ttc aac gcc cag tgg gag ccg tgg        528
Thr Gly Ala Trp Gly Gly Asn Leu Phe Asn Ala Gln Trp Glu Pro Trp
                165                 170                 175

tac tcg ttc gac cgg ggc ctg gcc ttc tca cgc cag gac ttc acc ccc        576
Tyr Ser Phe Asp Arg Gly Leu Ala Phe Ser Arg Gln Asp Phe Thr Pro
            180                 185                 190

gta ccg cgc gcg gac acc cag acc ctg atg gtc gcc ccg cac cgc agg        624
Val Pro Arg Ala Asp Thr Gln Thr Leu Met Val Ala Pro His Arg Arg
        195                 200                 205

ccg tcc gtg ccc tgg cgt gag aag gcc gcc tac cag cgg ttc gtc caa        672
Pro Ser Val Pro Trp Arg Glu Lys Ala Ala Tyr Gln Arg Phe Val Gln
    210                 215                 220

cgg gtc ttc gac acc ggc cag atg acg gtg ggc gac gcc gcg cgg aag        720
Arg Val Phe Asp Thr Gly Gln Met Thr Val Gly Asp Ala Ala Arg Lys
225                 230                 235                 240

gtg ctg cgc cgc gga cac gcc cag ttc gtg cgc ggg gcg ggc gtg agg        768
Val Leu Arg Arg Gly His Ala Gln Phe Val Arg Gly Ala Gly Val Arg
                245                 250                 255

ccg gcc gac cgg gtc aag gac ctc acg gtc ccg gag tgg acc gca ctc        816
Pro Ala Asp Arg Val Lys Asp Leu Thr Val Pro Glu Trp Thr Ala Leu
            260                 265                 270

ttc cgc gcc tac ggg cgg acg gcc gac cgc tga                            849
Phe Arg Ala Tyr Gly Arg Thr Ala Asp Arg
        275                 280


<210>  16
<211>  282
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  16

Val Thr Leu Lys Ser Pro Leu Pro Pro Gln Ser Val Ser Ala Pro Ala
1               5                   10                  15


Asp Ser Arg Ser Thr Ala Arg Arg Glu Trp Gly Gln Asn Phe Phe Arg
            20                  25                  30


Thr Ala Ala Ala Ala Cys Arg Phe Ser Ala Gln Leu Asp Gly Ser Asp
```

```
        35                  40                  45

Thr Ile Pro Pro Asp Ser Pro Asn Asp Leu Met Thr Val Glu Ile Gly
    50                  55                  60

Ala Gly Ser Gly Arg Val Thr Lys Val Leu Ala Ser Pro Gly Thr Pro
65                  70                  75                  80

Leu Leu Ala Val Glu Ile Asp Pro Arg Trp Ala Arg Arg Leu Ala Ala
                85                  90                  95

Glu Ser Leu Pro Asp Val Thr Val Val Asn Glu Asp Phe Leu Thr Leu
            100                 105                 110

Gln Leu Pro Gly Gln Pro Val Arg Leu Ile Gly Asn Leu Pro Phe Val
        115                 120                 125

Thr Gly Thr Arg Met Leu Arg Arg Cys Leu Asp Met Gly Pro Ala Arg
    130                 135                 140

Met Arg Gln Gly Val Phe Leu Leu Gln Arg Glu Tyr Val Gly Lys Arg
145                 150                 155                 160

Thr Gly Ala Trp Gly Gly Asn Leu Phe Asn Ala Gln Trp Glu Pro Trp
                165                 170                 175

Tyr Ser Phe Asp Arg Gly Leu Ala Phe Ser Arg Gln Asp Phe Thr Pro
            180                 185                 190

Val Pro Arg Ala Asp Thr Gln Thr Leu Met Val Ala Pro His Arg Arg
        195                 200                 205

Pro Ser Val Pro Trp Arg Glu Lys Ala Ala Tyr Gln Arg Phe Val Gln
    210                 215                 220

Arg Val Phe Asp Thr Gly Gln Met Thr Val Gly Asp Ala Ala Arg Lys
225                 230                 235                 240

Val Leu Arg Arg Gly His Ala Gln Phe Val Arg Gly Ala Gly Val Arg
                245                 250                 255

Pro Ala Asp Arg Val Lys Asp Leu Thr Val Pro Glu Trp Thr Ala Leu
            260                 265                 270

Phe Arg Ala Tyr Gly Arg Thr Ala Asp Arg
        275                 280
```

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<210>  17
<211>  831
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(831)

<400>  17
gtg aag gag gtg gcg gtc gac acc ggt acc ccg gcc ggc ccc gtg tgg        48
Val Lys Glu Val Ala Val Asp Thr Gly Thr Pro Ala Gly Pro Val Trp
1               5                   10                  15

cgt ggt gcc ggc ctc ggc acc cag ctg tgg gta ctg acc gcg cgg cag        96
Arg Gly Ala Gly Leu Gly Thr Gln Leu Trp Val Leu Thr Ala Arg Gln
            20                  25                  30

atc cgt tcc atg tac ggc gac cgc cgc ctg gcg ctg ttc agc ctg atg       144
Ile Arg Ser Met Tyr Gly Asp Arg Arg Leu Ala Leu Phe Ser Leu Met
        35                  40                  45

caa ccg gtg atc atg ctg ttg ctg ctg agc gag atc ttc ggc agc atg       192
Gln Pro Val Ile Met Leu Leu Leu Leu Ser Glu Ile Phe Gly Ser Met
    50                  55                  60

gcc gac ccg gac gac ttc ccg cag ggc gtg cgc tac atc gac tac gtg       240
Ala Asp Pro Asp Asp Phe Pro Gln Gly Val Arg Tyr Ile Asp Tyr Val
65                  70                  75                  80

gtg ccc gcg ctg ctg gtc acc acc ggc atc ggc tcg gcc cag ggc gcg       288
Val Pro Ala Leu Leu Val Thr Thr Gly Ile Gly Ser Ala Gln Gly Ala
                85                  90                  95

ggg gtg ggc ctg gtc agg gac atg gac aac ggg atg gtg gcg cgc ttc       336
Gly Val Gly Leu Val Arg Asp Met Asp Asn Gly Met Val Ala Arg Phe
            100                 105                 110

cgc gtc ctg ccg gcc cgg ctg ttc ctg gtg ctg gtc gcc cgg tcg ctg       384
Arg Val Leu Pro Ala Arg Leu Phe Leu Val Leu Val Ala Arg Ser Leu
        115                 120                 125

gcc gat ctg gtc cgt gtg ttc acc gag ttg gtc gtc ctc gtg gcc gtc       432
Ala Asp Leu Val Arg Val Phe Thr Glu Leu Val Val Leu Val Ala Val
    130                 135                 140

ggt gtg atc ctg ctg ggc ttc cgt ccg gcc ggg ggt ttg tgg ggc acg       480
Gly Val Ile Leu Leu Gly Phe Arg Pro Ala Gly Gly Leu Trp Gly Thr
145                 150                 155                 160

tcc gcc gcc ctg ttg ctc acc ctg ttc gtc atc tgg tcg ctg atc tgg       528
Ser Ala Ala Leu Leu Leu Thr Leu Phe Val Ile Trp Ser Leu Ile Trp
                165                 170                 175

ggg ttc atc gcc ctc gcg gcg tgg ctg cgc agc gtg gag gtg atg tcc       576
Gly Phe Ile Ala Leu Ala Ala Trp Leu Arg Ser Val Glu Val Met Ser
            180                 185                 190

agc ctc gcg gtt ctg gtg atg ttc ccg ctc atg ttc gcc tcc agt gcg       624
Ser Leu Ala Val Leu Val Met Phe Pro Leu Met Phe Ala Ser Ser Ala
        195                 200                 205
```

```
ttc gtc ccg ctg gac gcc ctc ccg gag tgg ctg cgc tcg gtg gcg cac      672
Phe Val Pro Leu Asp Ala Leu Pro Glu Trp Leu Arg Ser Val Ala His
    210                 215                 220

ctc aac ccc gtg acg tac gcg gtc gac agc gcc cgc cgc ctg gcg ctg      720
Leu Asn Pro Val Thr Tyr Ala Val Asp Ser Ala Arg Arg Leu Ala Leu
225                 230                 235                 240

gac tgg gac ccg ggg tgg agc gtg ccc ggc gcg ctg ctg acc agc acc      768
Asp Trp Asp Pro Gly Trp Ser Val Pro Gly Ala Leu Leu Thr Ser Thr
                245                 250                 255

gcg ctc atg gcg gtg ggg atg tac gtc gcc ggg cgt tcc ttc aag agg      816
Ala Leu Met Ala Val Gly Met Tyr Val Ala Gly Arg Ser Phe Lys Arg
            260                 265                 270

ccc ccg aac gaa tga                                                  831
Pro Pro Asn Glu
        275


<210>  18
<211>  276
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  18

Val Lys Glu Val Ala Val Asp Thr Gly Thr Pro Ala Gly Pro Val Trp
1               5                   10                  15


Arg Gly Ala Gly Leu Gly Thr Gln Leu Trp Val Leu Thr Ala Arg Gln
            20                  25                  30


Ile Arg Ser Met Tyr Gly Asp Arg Arg Leu Ala Leu Phe Ser Leu Met
        35                  40                  45


Gln Pro Val Ile Met Leu Leu Leu Leu Ser Glu Ile Phe Gly Ser Met
    50                  55                  60


Ala Asp Pro Asp Asp Phe Pro Gln Gly Val Arg Tyr Ile Asp Tyr Val
65                  70                  75                  80


Val Pro Ala Leu Leu Val Thr Thr Gly Ile Gly Ser Ala Gln Gly Ala
                85                  90                  95


Gly Val Gly Leu Val Arg Asp Met Asp Asn Gly Met Val Ala Arg Phe
            100                 105                 110


Arg Val Leu Pro Ala Arg Leu Phe Leu Val Leu Val Ala Arg Ser Leu
        115                 120                 125


Ala Asp Leu Val Arg Val Phe Thr Glu Leu Val Val Leu Val Ala Val
    130                 135                 140
```

```
Gly Val Ile Leu Leu Gly Phe Arg Pro Ala Gly Gly Leu Trp Gly Thr
145                 150                 155                 160


Ser Ala Ala Leu Leu Leu Thr Leu Phe Val Ile Trp Ser Leu Ile Trp
                165                 170                 175


Gly Phe Ile Ala Leu Ala Ala Trp Leu Arg Ser Val Glu Val Met Ser
            180                 185                 190


Ser Leu Ala Val Leu Val Met Phe Pro Leu Met Phe Ala Ser Ser Ala
        195                 200                 205


Phe Val Pro Leu Asp Ala Leu Pro Glu Trp Leu Arg Ser Val Ala His
    210                 215                 220


Leu Asn Pro Val Thr Tyr Ala Val Asp Ser Ala Arg Arg Leu Ala Leu
225                 230                 235                 240


Asp Trp Asp Pro Gly Trp Ser Val Pro Gly Ala Leu Leu Thr Ser Thr
                245                 250                 255


Ala Leu Met Ala Val Gly Met Tyr Val Ala Gly Arg Ser Phe Lys Arg
            260                 265                 270


Pro Pro Asn Glu
        275


<210>  19
<211>  882
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(882)

<400>  19
gtg gac atc gag gtc gaa cgg ggc cgg gtg ctc ggg ctg ctg ggt cac        48
Val Asp Ile Glu Val Glu Arg Gly Arg Val Leu Gly Leu Leu Gly His
1               5                   10                  15

aac ggg gcc ggc aag acg acc ttg gtg aac atc ctt gcc acg gtc tcc        96
Asn Gly Ala Gly Lys Thr Thr Leu Val Asn Ile Leu Ala Thr Val Ser
            20                  25                  30

ccg gcg tcc gcg ggc acg gtg acc gtc gcc ggt ttc gac gtc gcg acg       144
Pro Ala Ser Ala Gly Thr Val Thr Val Ala Gly Phe Asp Val Ala Thr
        35                  40                  45

cag ggc gcc gag atc cgc gcg cgc atc ggg gtg acc ggc cag ttc gcg       192
Gln Gly Ala Glu Ile Arg Ala Arg Ile Gly Val Thr Gly Gln Phe Ala
    50                  55                  60
```

```
tcg gtg gac gag tac ctg agc gga ttc cgc aac ctc gtc ctg atc ggc         240
Ser Val Asp Glu Tyr Leu Ser Gly Phe Arg Asn Leu Val Leu Ile Gly
65                  70                  75                  80

cgc ctc ctc ggg gcg gga cgg cgt gag gcg gcg gcc cgg gcc acc gag         288
Arg Leu Leu Gly Ala Gly Arg Arg Glu Ala Ala Ala Arg Ala Thr Glu
                85                  90                  95

ctc ctg gag ctg ttc gag ctg acc ggg gcg gcc cac cag ccc tcc cgc         336
Leu Leu Glu Leu Phe Glu Leu Thr Gly Ala Ala His Gln Pro Ser Arg
            100                 105                 110

acc tac tcg ggc ggg atg cgc cga cgg ctc gac ctc gcc gcc agc ctg         384
Thr Tyr Ser Gly Gly Met Arg Arg Arg Leu Asp Leu Ala Ala Ser Leu
        115                 120                 125

gtc ggc cgg ccg gac gtg ctg ttc ctc gac gag ccg acg acc ggg ctg         432
Val Gly Arg Pro Asp Val Leu Phe Leu Asp Glu Pro Thr Thr Gly Leu
    130                 135                 140

gac ccg gcg acc cgg atc gcc ctg tgg gag acg gtg gag aag ctg gtg         480
Asp Pro Ala Thr Arg Ile Ala Leu Trp Glu Thr Val Glu Lys Leu Val
145                 150                 155                 160

gcg ggc ggc acg acc gtc ctg ctg acc acc cag tac ctg gac gag gcg         528
Ala Gly Gly Thr Thr Val Leu Leu Thr Thr Gln Tyr Leu Asp Glu Ala
                165                 170                 175

gac cgg ctg gcc gac tgg atc acc gtc ctg tcg aag ggc cgg gtg gtg         576
Asp Arg Leu Ala Asp Trp Ile Thr Val Leu Ser Lys Gly Arg Val Val
            180                 185                 190

gcc tcg gac acc acc gac cgg ctc aag gcc gac ctg ggc cac cgg tcg         624
Ala Ser Asp Thr Thr Asp Arg Leu Lys Ala Asp Leu Gly His Arg Ser
        195                 200                 205

gtg cgg gtg gtc ctt ccg ccc gcc gcc gac ctg acg gcc gcc gcc gcc         672
Val Arg Val Val Leu Pro Pro Ala Ala Asp Leu Thr Ala Ala Ala Ala
    210                 215                 220

gcg ctc acc gcc ggc ggg ttc cgt ccg cgg tcc gac gcc ggg gag cac         720
Ala Leu Thr Ala Gly Gly Phe Arg Pro Arg Ser Asp Ala Gly Glu His
225                 230                 235                 240

gcg ctg acc acg ccc gtg gac acc tcg gcc ggt atc gcg ggc gtc atc         768
Ala Leu Thr Thr Pro Val Asp Thr Ser Ala Gly Ile Ala Gly Val Ile
                245                 250                 255

cgc gcg ctg gac acc gtc gga acg cag gcc gtc gag ctg acc gtc aag         816
Arg Ala Leu Asp Thr Val Gly Thr Gln Ala Val Glu Leu Thr Val Lys
            260                 265                 270

gag ccg tcc ctg gac gac gtc tac ctg gcg ctc acc cat ccc tca ccc         864
Glu Pro Ser Leu Asp Asp Val Tyr Leu Ala Leu Thr His Pro Ser Pro
        275                 280                 285

gcc gcc gac gcg gcc tga                                                 882
Ala Ala Asp Ala Ala
    290


<210>  20
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```
<211>  293
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  20

Val Asp Ile Glu Val Glu Arg Gly Arg Val Leu Gly Leu Leu Gly His
1               5                   10                  15


Asn Gly Ala Gly Lys Thr Thr Leu Val Asn Ile Leu Ala Thr Val Ser
            20                  25                  30


Pro Ala Ser Ala Gly Thr Val Thr Val Ala Gly Phe Asp Val Ala Thr
        35                  40                  45


Gln Gly Ala Glu Ile Arg Ala Arg Ile Gly Val Thr Gly Gln Phe Ala
    50                  55                  60


Ser Val Asp Glu Tyr Leu Ser Gly Phe Arg Asn Leu Val Leu Ile Gly
65                  70                  75                  80


Arg Leu Leu Gly Ala Gly Arg Arg Glu Ala Ala Ala Arg Ala Thr Glu
                85                  90                  95


Leu Leu Glu Leu Phe Glu Leu Thr Gly Ala Ala His Gln Pro Ser Arg
            100                 105                 110


Thr Tyr Ser Gly Gly Met Arg Arg Arg Leu Asp Leu Ala Ala Ser Leu
        115                 120                 125


Val Gly Arg Pro Asp Val Leu Phe Leu Asp Glu Pro Thr Thr Gly Leu
    130                 135                 140


Asp Pro Ala Thr Arg Ile Ala Leu Trp Glu Thr Val Glu Lys Leu Val
145                 150                 155                 160


Ala Gly Gly Thr Thr Val Leu Leu Thr Thr Gln Tyr Leu Asp Glu Ala
                165                 170                 175


Asp Arg Leu Ala Asp Trp Ile Thr Val Leu Ser Lys Gly Arg Val Val
            180                 185                 190


Ala Ser Asp Thr Thr Asp Arg Leu Lys Ala Asp Leu Gly His Arg Ser
        195                 200                 205


Val Arg Val Val Leu Pro Pro Ala Ala Asp Leu Thr Ala Ala Ala Ala
    210                 215                 220


Ala Leu Thr Ala Gly Gly Phe Arg Pro Arg Ser Asp Ala Gly Glu His
```

```
225                 230                 235                 240


Ala Leu Thr Thr Pro Val Asp Thr Ser Ala Gly Ile Ala Gly Val Ile
                245                 250                 255


Arg Ala Leu Asp Thr Val Gly Thr Gln Ala Val Glu Leu Thr Val Lys
            260                 265                 270


Glu Pro Ser Leu Asp Asp Val Tyr Leu Ala Leu Thr His Pro Ser Pro
        275                 280                 285


Ala Ala Asp Ala Ala
    290


<210>  21
<211>  228
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(228)

<400>  21
atg agc aac ccg ttc gag gac acg gaa gcc acc tac gtc gtg ctg gtc        48
Met Ser Asn Pro Phe Glu Asp Thr Glu Ala Thr Tyr Val Val Leu Val
1               5                   10                  15

aac gac gag ggg cag cac tcg ctg tgg ccg tcg ttc gcg gag gtc ccg        96
Asn Asp Glu Gly Gln His Ser Leu Trp Pro Ser Phe Ala Glu Val Pro
            20                  25                  30

gcg ggc tgg tcc gtc gtg gtg ccg gag acg gac cgg cag tcg tgc ctg       144
Ala Gly Trp Ser Val Val Val Pro Glu Thr Asp Arg Gln Ser Cys Leu
        35                  40                  45

gac tac atc aac gag aac tgg acc gac atg cgc ccc aag agc ctc gtc       192
Asp Tyr Ile Asn Glu Asn Trp Thr Asp Met Arg Pro Lys Ser Leu Val
    50                  55                  60

gag gcg atg gcg acg gcc ggg cag gac gcc cct tga                       228
Glu Ala Met Ala Thr Ala Gly Gln Asp Ala Pro
65                  70                  75


<210>  22
<211>  75
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  22

Met Ser Asn Pro Phe Glu Asp Thr Glu Ala Thr Tyr Val Val Leu Val
1               5                   10                  15


Asn Asp Glu Gly Gln His Ser Leu Trp Pro Ser Phe Ala Glu Val Pro
```

```
            20                  25                  30


Ala Gly Trp Ser Val Val Val Pro Glu Thr Asp Arg Gln Ser Cys Leu
        35                  40                  45


Asp Tyr Ile Asn Glu Asn Trp Thr Asp Met Arg Pro Lys Ser Leu Val
    50                  55                  60


Glu Ala Met Ala Thr Ala Gly Gln Asp Ala Pro
65                  70                  75


<210>  23
<211>  1212
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1212)

<400>  23
atg ggt gag gcc gtg acg gga ccg atg gag ctg agc aag gac gcg gac        48
Met Gly Glu Ala Val Thr Gly Pro Met Glu Leu Ser Lys Asp Ala Asp
1               5                   10                  15

gcc cgg ggg ctg ctt gag tgg ttc gcg tac aac agg acg cgt cat ccg        96
Ala Arg Gly Leu Leu Glu Trp Phe Ala Tyr Asn Arg Thr Arg His Pro
            20                  25                  30

gtg ttc tgg gac gag acc cga cag gcg tgg cag gtc ttc ggc tac gac       144
Val Phe Trp Asp Glu Thr Arg Gln Ala Trp Gln Val Phe Gly Tyr Asp
        35                  40                  45

gac tac gtg acg gtg tcg aac aac ccg cag ttc ttc tcc tcg gac ttc       192
Asp Tyr Val Thr Val Ser Asn Asn Pro Gln Phe Phe Ser Ser Asp Phe
    50                  55                  60

aac atg gtg atg ccg acg ccg ccc gaa ctg gag atg atc atc ggt ccg       240
Asn Met Val Met Pro Thr Pro Pro Glu Leu Glu Met Ile Ile Gly Pro
65                  70                  75                  80

ggc acg atc ggc gcg ctg gac ccg ccc gcg cac gga ccg atg cgc aag       288
Gly Thr Ile Gly Ala Leu Asp Pro Pro Ala His Gly Pro Met Arg Lys
                85                  90                  95

ctg gtg agc cag gcg ttc acc ccc cga cgg atc gcc cgg ctg gag ccc       336
Leu Val Ser Gln Ala Phe Thr Pro Arg Arg Ile Ala Arg Leu Glu Pro
            100                 105                 110

agg gtg cgc gcg atc acc gag gag ctc ctg gac aag gtg ggg cag cag       384
Arg Val Arg Ala Ile Thr Glu Glu Leu Leu Asp Lys Val Gly Gln Gln
        115                 120                 125

gac gtc gtc gac gcc gtg ggt gac ctg tcc tac gcg ctg ccg gtc atc       432
Asp Val Val Asp Ala Val Gly Asp Leu Ser Tyr Ala Leu Pro Val Ile
    130                 135                 140

gtg atc gcc gaa ctg ctg ggc ata ccc gcc ggc gac cgt gac ctg ttc       480
```

```
Val Ile Ala Glu Leu Leu Gly Ile Pro Ala Gly Asp Arg Asp Leu Phe
145                 150                 155                 160

cgg gag tgg gtc gac acc ctg ctg acg aac gag ggc ctg gag tac ccg       528
Arg Glu Trp Val Asp Thr Leu Leu Thr Asn Glu Gly Leu Glu Tyr Pro
                165                 170                 175

aac ctc ccg gac aac ttc acc gag acg atc gcg ccc gcg ctc aag gag       576
Asn Leu Pro Asp Asn Phe Thr Glu Thr Ile Ala Pro Ala Leu Lys Glu
            180                 185                 190

atg acc gac tac ctc ctg aag cag atc cac gcc aag cgg gac gcg ccc       624
Met Thr Asp Tyr Leu Leu Lys Gln Ile His Ala Lys Arg Asp Ala Pro
        195                 200                 205

gcc gac gac ctg gtc agc ggg ctg gtc cag gcg gag cag gac ggc cgc       672
Ala Asp Asp Leu Val Ser Gly Leu Val Gln Ala Glu Gln Asp Gly Arg
    210                 215                 220

cgg ctg acc gac gtc gag atc gtc aac atc gtc gcg ctg ctc ctg acg       720
Arg Leu Thr Asp Val Glu Ile Val Asn Ile Val Ala Leu Leu Leu Thr
225                 230                 235                 240

gcg ggg cac gtc tcc tcc agc acc ctg ctc agc aac ctg ttc ctg gtc       768
Ala Gly His Val Ser Ser Ser Thr Leu Leu Ser Asn Leu Phe Leu Val
                245                 250                 255

ctg gag gag aac ccg cag gcg ctg gag gac ctg cgg gcc gat cgc tcc       816
Leu Glu Glu Asn Pro Gln Ala Leu Glu Asp Leu Arg Ala Asp Arg Ser
            260                 265                 270

ctg gtg ccc ggc gcg atc gag gag acg ctg cgc tac cgc agc ccc ttc       864
Leu Val Pro Gly Ala Ile Glu Glu Thr Leu Arg Tyr Arg Ser Pro Phe
        275                 280                 285

aac aac atc ttc cgg ttc gtc aag gag gac acc acc gtc ctc ggt ccg       912
Asn Asn Ile Phe Arg Phe Val Lys Glu Asp Thr Thr Val Leu Gly Pro
    290                 295                 300

ctc atg gag aag ggc cag atg gtg atc gcc tgg agc cag tcc gcc aac       960
Leu Met Glu Lys Gly Gln Met Val Ile Ala Trp Ser Gln Ser Ala Asn
305                 310                 315                 320

cgg gac ccc cgg cac ttc ccg gac ccg gac acc ttc gac atc cgc cgc      1008
Arg Asp Pro Arg His Phe Pro Asp Pro Asp Thr Phe Asp Ile Arg Arg
                325                 330                 335

tcg gac ggc acc cgg cac atg gcc ttc ggg cac ggc atc cac cac tgc      1056
Ser Asp Gly Thr Arg His Met Ala Phe Gly His Gly Ile His His Cys
            340                 345                 350

ctg ggt gcc gcc ctc gcc cgc ctg gag ggc aag gtc atg ctc gaa ctc      1104
Leu Gly Ala Ala Leu Ala Arg Leu Glu Gly Lys Val Met Leu Glu Leu
        355                 360                 365

ctc ctg gac cgg gtc caa ggc ttc cgc atc gac cac gag cac acc gtg      1152
Leu Leu Asp Arg Val Gln Gly Phe Arg Ile Asp His Glu His Thr Val
    370                 375                 380

ttc tac gag gcc gac cag ctc act ccg aag tac ctg ccc gtc cgg gtc      1200
Phe Tyr Glu Ala Asp Gln Leu Thr Pro Lys Tyr Leu Pro Val Arg Val
385                 390                 395                 400
```

```
gac tgg aac tga                                                     1212
Asp Trp Asn



<210>  24
<211>  403
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  24

Met Gly Glu Ala Val Thr Gly Pro Met Glu Leu Ser Lys Asp Ala Asp
1               5                   10                  15


Ala Arg Gly Leu Leu Glu Trp Phe Ala Tyr Asn Arg Thr Arg His Pro
            20                  25                  30


Val Phe Trp Asp Glu Thr Arg Gln Ala Trp Gln Val Phe Gly Tyr Asp
        35                  40                  45


Asp Tyr Val Thr Val Ser Asn Asn Pro Gln Phe Phe Ser Ser Asp Phe
    50                  55                  60


Asn Met Val Met Pro Thr Pro Pro Glu Leu Glu Met Ile Ile Gly Pro
65                  70                  75                  80


Gly Thr Ile Gly Ala Leu Asp Pro Pro Ala His Gly Pro Met Arg Lys
                85                  90                  95


Leu Val Ser Gln Ala Phe Thr Pro Arg Arg Ile Ala Arg Leu Glu Pro
            100                 105                 110


Arg Val Arg Ala Ile Thr Glu Glu Leu Leu Asp Lys Val Gly Gln Gln
        115                 120                 125


Asp Val Val Asp Ala Val Gly Asp Leu Ser Tyr Ala Leu Pro Val Ile
    130                 135                 140


Val Ile Ala Glu Leu Leu Gly Ile Pro Ala Gly Asp Arg Asp Leu Phe
145                 150                 155                 160


Arg Glu Trp Val Asp Thr Leu Leu Thr Asn Glu Gly Leu Glu Tyr Pro
                165                 170                 175


Asn Leu Pro Asp Asn Phe Thr Glu Thr Ile Ala Pro Ala Leu Lys Glu
            180                 185                 190


Met Thr Asp Tyr Leu Leu Lys Gln Ile His Ala Lys Arg Asp Ala Pro
        195                 200                 205
```

```
Ala Asp Asp Leu Val Ser Gly Leu Val Gln Ala Glu Gln Asp Gly Arg
    210                 215                 220

Arg Leu Thr Asp Val Glu Ile Val Asn Ile Val Ala Leu Leu Leu Thr
225                 230                 235                 240

Ala Gly His Val Ser Ser Ser Thr Leu Leu Ser Asn Leu Phe Leu Val
                245                 250                 255

Leu Glu Glu Asn Pro Gln Ala Leu Glu Asp Leu Arg Ala Asp Arg Ser
            260                 265                 270

Leu Val Pro Gly Ala Ile Glu Glu Thr Leu Arg Tyr Arg Ser Pro Phe
        275                 280                 285

Asn Asn Ile Phe Arg Phe Val Lys Glu Asp Thr Thr Val Leu Gly Pro
    290                 295                 300

Leu Met Glu Lys Gly Gln Met Val Ile Ala Trp Ser Gln Ser Ala Asn
305                 310                 315                 320

Arg Asp Pro Arg His Phe Pro Asp Pro Asp Thr Phe Asp Ile Arg Arg
                325                 330                 335

Ser Asp Gly Thr Arg His Met Ala Phe Gly His Gly Ile His His Cys
            340                 345                 350

Leu Gly Ala Ala Leu Ala Arg Leu Glu Gly Lys Val Met Leu Glu Leu
        355                 360                 365

Leu Leu Asp Arg Val Gln Gly Phe Arg Ile Asp His Glu His Thr Val
    370                 375                 380

Phe Tyr Glu Ala Asp Gln Leu Thr Pro Lys Tyr Leu Pro Val Arg Val
385                 390                 395                 400

Asp Trp Asn


<210>  25
<211>  540
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(540)
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<220>
<221>  CDS2
<222>  (190)..(540)

<400>  25
ctg aac ccg agg gtc tcg tcc cgg agt cca ggg ccg tcc cga gcc ggc        48
Leu Asn Pro Arg Val Ser Ser Arg Ser Pro Gly Pro Ser Arg Ala Gly
1               5                   10                  15

cct gga cct cac gac cgc ccg ata agg agc gcc gcc atc gcc gag aac        96
Pro Gly Pro His Asp Arg Pro Ile Arg Ser Ala Ala Ile Ala Glu Asn
            20                  25                  30

aca gcc gag ctc cct gcc cgg cgg gtc ggc agg atc aag ccg tgc cgg       144
Thr Ala Glu Leu Pro Ala Arg Arg Val Gly Arg Ile Lys Pro Cys Arg
        35                  40                  45

ctg atc agg ctc gag cag cac atc gac ccg cgc ggc agc ctc tcc gtg       192
Leu Ile Arg Leu Glu Gln His Ile Asp Pro Arg Gly Ser Leu Ser Val
    50                  55                  60

atc gag tcc ggc gtg acc gtg gac ttc ccc gtc cga cgc gtc tac tac       240
Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr Tyr
65                  70                  75                  80

atg cat ggc cag acc cag tcc tct ccc ccg cgc ggc ctg cac gcg cac       288
Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala His
                85                  90                  95

cgc acc ctg gaa caa ctc gtc atc gcc gtc cac ggc gcc ttc tcc atc       336
Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser Ile
            100                 105                 110

acc ctc gac gac ggc ttc cag cac gcc acc tac cgt ctg gac gaa ccc       384
Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu Pro
        115                 120                 125

gga gcc gga ctc tgc atc ggc ccc atg gtc tgg cgc gtc ctg aag gac       432
Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys Asp
    130                 135                 140

ttc gac ccc gac acc gtg gcc ctg gtc ctc gcc tcg cag cac tac gag       480
Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr Glu
145                 150                 155                 160

gag tcc gac tac tac cgc gac tac gac acc ttc ctg cat gac gca cgg       528
Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala Arg
                165                 170                 175

agc ctc aca tga                                                       540
Ser Leu Thr


<210>  26
<211>  179
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  26

Leu Asn Pro Arg Val Ser Ser Arg Ser Pro Gly Pro Ser Arg Ala Gly
1               5                   10                  15
```

```
Pro Gly Pro His Asp Arg Pro Ile Arg Ser Ala Ala Ile Ala Glu Asn
            20                  25                  30

Thr Ala Glu Leu Pro Ala Arg Arg Val Gly Arg Ile Lys Pro Cys Arg
        35                  40                  45

Leu Ile Arg Leu Glu Gln His Ile Asp Pro Arg Gly Ser Leu Ser Val
    50                  55                  60

Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr Tyr
65                  70                  75                  80

Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala His
                85                  90                  95

Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser Ile
            100                 105                 110

Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu Pro
        115                 120                 125

Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys Asp
    130                 135                 140

Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr Glu
145                 150                 155                 160

Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala Arg
                165                 170                 175

Ser Leu Thr


<210>  27
<211>  116
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  27

Val Ile Glu Ser Gly Val Thr Val Asp Phe Pro Val Arg Arg Val Tyr
1               5                   10                  15

Tyr Met His Gly Gln Thr Gln Ser Ser Pro Pro Arg Gly Leu His Ala
            20                  25                  30

His Arg Thr Leu Glu Gln Leu Val Ile Ala Val His Gly Ala Phe Ser
        35                  40                  45
```

```
Ile Thr Leu Asp Asp Gly Phe Gln His Ala Thr Tyr Arg Leu Asp Glu
    50                  55                  60


Pro Gly Ala Gly Leu Cys Ile Gly Pro Met Val Trp Arg Val Leu Lys
65                  70                  75                  80


Asp Phe Asp Pro Asp Thr Val Ala Leu Val Leu Ala Ser Gln His Tyr
                85                  90                  95


Glu Glu Ser Asp Tyr Tyr Arg Asp Tyr Asp Thr Phe Leu His Asp Ala
            100                 105                 110


Arg Ser Leu Thr
        115


<210>  28
<211>  1167
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1167)

<400>  28
atg acc atc ccc ttc ctc gac gcg ggc gcc ggc tac cgg gag ttg cga        48
Met Thr Ile Pro Phe Leu Asp Ala Gly Ala Gly Tyr Arg Glu Leu Arg
1               5                   10                  15

gcc gag atc gac gcg gcc ctg cag cgg gtg tcc gcc tcc ggc cgc tat        96
Ala Glu Ile Asp Ala Ala Leu Gln Arg Val Ser Ala Ser Gly Arg Tyr
            20                  25                  30

ctg ctc gac gcg gaa ctc gcg gcc ttc gag gag gag ttc gcc gcg tac       144
Leu Leu Asp Ala Glu Leu Ala Ala Phe Glu Glu Glu Phe Ala Ala Tyr
        35                  40                  45

tgc gac aac gac cac tgt gtg gcg gtg ggc agt ggc tgc gac gcg ctg       192
Cys Asp Asn Asp His Cys Val Ala Val Gly Ser Gly Cys Asp Ala Leu
    50                  55                  60

gag ctg tcc ctg cgg gcg ctg gac atc ggt ccc ggg gac gag gtg gtg       240
Glu Leu Ser Leu Arg Ala Leu Asp Ile Gly Pro Gly Asp Glu Val Val
65                  70                  75                  80

gtg ccc gcg cac acc ttc atc ggg acc tgg ctg gcc gtg tcc gct acc       288
Val Pro Ala His Thr Phe Ile Gly Thr Trp Leu Ala Val Ser Ala Thr
                85                  90                  95

ggg gca cgg ccg gtg gcc gtc gac ccg acg ccg gac ggg ctc tcc ctc       336
Gly Ala Arg Pro Val Ala Val Asp Pro Thr Pro Asp Gly Leu Ser Leu
            100                 105                 110

gac ccg gcg ctg gtg gag gcg gcg ctc acc cct cgg acc aga gcc ctg       384
Asp Pro Ala Leu Val Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Leu
```

```
        115                 120                 125

atg ccg gtg cac ctg cac ggg cac ccg gcc gac ctc gac ccg cta ctg       432
Met Pro Val His Leu His Gly His Pro Ala Asp Leu Asp Pro Leu Leu
    130                 135                 140

gcg atc gcc gga cgg cac ggc ctg gcc gtg gtc gag gac gcc gcg cag       480
Ala Ile Ala Gly Arg His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
145                 150                 155                 160

gcc cac ggc gcc cgt tac cgg ggc cgc agg atc ggc tcg ggc cac gtg       528
Ala His Gly Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Val
                165                 170                 175

gtc gcg ttc agc ttc tac ccc ggc aag aac ctc ggc gcc atg ggg gac       576
Val Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Met Gly Asp
            180                 185                 190

ggc ggc gcg gtg gtc acg ggt gac tcc ggt gtg gcc gag cgg atc cgg       624
Gly Gly Ala Val Val Thr Gly Asp Ser Gly Val Ala Glu Arg Ile Arg
        195                 200                 205

ttg ctg cgc aac tgc ggc tcg cgg gag aag tac cgg cac gag gtg cgc       672
Leu Leu Arg Asn Cys Gly Ser Arg Glu Lys Tyr Arg His Glu Val Arg
    210                 215                 220

tcg acc cac tcc cgg ctc gac gag ttc cag gcg gcc gtg ctg cgg gcc       720
Ser Thr His Ser Arg Leu Asp Glu Phe Gln Ala Ala Val Leu Arg Ala
225                 230                 235                 240

aaa ctg ccg cgg ctc gac gcg tgg aac gcc cgc cgg gcc ggc acg gcc       768
Lys Leu Pro Arg Leu Asp Ala Trp Asn Ala Arg Arg Ala Gly Thr Ala
                245                 250                 255

gaa cgg tac ggg cgg gcc ctg ggt ccg gta ccg cag atc gcc gtc ccg       816
Glu Arg Tyr Gly Arg Ala Leu Gly Pro Val Pro Gln Ile Ala Val Pro
            260                 265                 270

gtc acc gct ccc tgg gcc gac ccg gtg tgg cac ctg tac gtg atc cgc       864
Val Thr Ala Pro Trp Ala Asp Pro Val Trp His Leu Tyr Val Ile Arg
        275                 280                 285

tgc gcg gag cgc gac gag ctg cgc cgc cgg ctg gaa cga gcc ggg gtc       912
Cys Ala Glu Arg Asp Glu Leu Arg Arg Arg Leu Glu Arg Ala Gly Val
    290                 295                 300

cag acc ctg atc cac tac ccc gtg ccc ccg cac cgg tcc ccg gcc tac       960
Gln Thr Leu Ile His Tyr Pro Val Pro Pro His Arg Ser Pro Ala Tyr
305                 310                 315                 320

gcc gac gac ccg gcc ggc gca ccg gcg ggg acc cac ccg ctc agt gag      1008
Ala Asp Asp Pro Ala Gly Ala Pro Ala Gly Thr His Pro Leu Ser Glu
                325                 330                 335

cgc ctg gcg gcg cag agc ctc agc ctt ccc ctg gga ccg cac ctc ggg      1056
Arg Leu Ala Ala Gln Ser Leu Ser Leu Pro Leu Gly Pro His Leu Gly
            340                 345                 350

gag gac gag gcc cgc gcc gtc gtg gcg gcg gtc cgg gcg gcg tcc gca      1104
Glu Asp Glu Ala Arg Ala Val Val Ala Ala Val Arg Ala Ala Ser Ala
        355                 360                 365

ggg ctg gcg gcg tac ccg acg ccg gac ggc cag cgt ttt cct cta gtg      1152
```

```
Gly Leu Ala Ala Tyr Pro Thr Pro Asp Gly Gln Arg Phe Pro Leu Val
    370                 375                 380

acg gag aaa cga tga                                                1167
Thr Glu Lys Arg
385


<210>  29
<211>  388
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  29

Met Thr Ile Pro Phe Leu Asp Ala Gly Ala Gly Tyr Arg Glu Leu Arg
1               5                   10                  15


Ala Glu Ile Asp Ala Ala Leu Gln Arg Val Ser Ala Ser Gly Arg Tyr
            20                  25                  30


Leu Leu Asp Ala Glu Leu Ala Ala Phe Glu Glu Glu Phe Ala Ala Tyr
        35                  40                  45


Cys Asp Asn Asp His Cys Val Ala Val Gly Ser Gly Cys Asp Ala Leu
    50                  55                  60


Glu Leu Ser Leu Arg Ala Leu Asp Ile Gly Pro Gly Asp Glu Val Val
65                  70                  75                  80


Val Pro Ala His Thr Phe Ile Gly Thr Trp Leu Ala Val Ser Ala Thr
                85                  90                  95


Gly Ala Arg Pro Val Ala Val Asp Pro Thr Pro Asp Gly Leu Ser Leu
            100                 105                 110


Asp Pro Ala Leu Val Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Leu
        115                 120                 125


Met Pro Val His Leu His Gly His Pro Ala Asp Leu Asp Pro Leu Leu
    130                 135                 140


Ala Ile Ala Gly Arg His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
145                 150                 155                 160


Ala His Gly Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Val
                165                 170                 175


Val Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Met Gly Asp
            180                 185                 190
```

```
Gly Gly Ala Val Val Thr Gly Asp Ser Gly Val Ala Glu Arg Ile Arg
        195                 200                 205

Leu Leu Arg Asn Cys Gly Ser Arg Glu Lys Tyr Arg His Glu Val Arg
    210                 215                 220

Ser Thr His Ser Arg Leu Asp Glu Phe Gln Ala Ala Val Leu Arg Ala
225                 230                 235                 240

Lys Leu Pro Arg Leu Asp Ala Trp Asn Ala Arg Arg Ala Gly Thr Ala
                245                 250                 255

Glu Arg Tyr Gly Arg Ala Leu Gly Pro Val Pro Gln Ile Ala Val Pro
            260                 265                 270

Val Thr Ala Pro Trp Ala Asp Pro Val Trp His Leu Tyr Val Ile Arg
        275                 280                 285

Cys Ala Glu Arg Asp Glu Leu Arg Arg Arg Leu Glu Arg Ala Gly Val
    290                 295                 300

Gln Thr Leu Ile His Tyr Pro Val Pro Pro His Arg Ser Pro Ala Tyr
305                 310                 315                 320

Ala Asp Asp Pro Ala Gly Ala Pro Ala Gly Thr His Pro Leu Ser Glu
                325                 330                 335

Arg Leu Ala Ala Gln Ser Leu Ser Leu Pro Leu Gly Pro His Leu Gly
            340                 345                 350

Glu Asp Glu Ala Arg Ala Val Val Ala Ala Val Arg Ala Ala Ser Ala
        355                 360                 365

Gly Leu Ala Ala Tyr Pro Thr Pro Asp Gly Gln Arg Phe Pro Leu Val
    370                 375                 380

Thr Glu Lys Arg
385

<210>  30
<211>  909
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(909)

<220>
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<221>  CDS2
<222>  (10)..(909)

<220>
<221>  CDS3
<222>  (28)..(909)

<400>  30
atg acc gag gtc atg tca ggg cgt ccc gga atg aaa ggg atc atc ctc          48
Met Thr Glu Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu
1               5                   10                  15

gca ggc ggc gga ggg acc cgc cta cgc ccc ttg acc ggc acg ctg tcc          96
Ala Gly Gly Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser
            20                  25                  30

aag caa ctg ctg ccc gtc tac gac aag ccg atg atc tac tac ccg ctg         144
Lys Gln Leu Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu
        35                  40                  45

tcc gtc ctg atg ctg ggc ggc atc cgc gag atc ctc gtc gtc tcc tcc         192
Ser Val Leu Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser
    50                  55                  60

acc cag cac atc gag ctg ttc cag cgg ctg ctg ggc gac ggc tcc cgc         240
Thr Gln His Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg
65                  70                  75                  80

ctc ggc ctc gac atc acc tac gcc gaa cag gcc gag ccc gag ggc ata         288
Leu Gly Leu Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile
                85                  90                  95

gcg cag gcc atc acc atc ggc acc gac cac atc ggc gac tca ccg gtc         336
Ala Gln Ala Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val
            100                 105                 110

gcg ctc atc ctg ggc gac aac atc ttc cac ggc ccc ggc ttc tcg gcc         384
Ala Leu Ile Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala
        115                 120                 125

gtg ctc cag ggc agc atc cgc cac ctc gac ggc tgt gtg ctg ttc ggc         432
Val Leu Gln Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly
    130                 135                 140

tac ccg gtc agc gac ccg aag cgc tac ggc gtc ggc gag atc gac gac         480
Tyr Pro Val Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp
145                 150                 155                 160

cag ggc gta ctg ctg tcc ctg gag gag aaa ccg gcc cgg ccc cgc tcc         528
Gln Gly Val Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser
                165                 170                 175

aac ctc gcc gtc acc ggc ctc tac ctc tac gac aac gac gtg gtc gac         576
Asn Leu Ala Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp
            180                 185                 190

atc gcc aag aac atc cgg ccc tcg gcg cgc ggc gaa ctc gag atc acg         624
Ile Ala Lys Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr
        195                 200                 205

gac gtc aac agg acc tac ctg gag cag aaa cgc gcc cgg ctc atc gaa         672
Asp Val Asn Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu
    210                 215                 220
```

```
ctg ggc cac ggc ttc gcc tgg ctc gac atg ggc acc cac gac tcc ctc        720
Leu Gly His Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu
225                 230                 235                 240

ctc cag ggc ggc cag tac gtc cag ctc atc gag cag cgc cag gga gtg        768
Leu Gln Gly Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val
                245                 250                 255

cgg atc gcc tgc atc gag gag atc gcc ctg cgc atg ggc ttc atc gac        816
Arg Ile Ala Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp
            260                 265                 270

gcc gac acc ctc cac cgg ctc ggc cgc gaa ctg ggc acc tcc gga tac        864
Ala Asp Thr Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr
        275                 280                 285

ggc gcg tac ctg atg gag gtg gcc acc cgt gca ggc acc gaa tga            909
Gly Ala Tyr Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
    290                 295                 300


<210>  31
<211>  302
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  31

Met Thr Glu Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu
1               5                   10                  15


Ala Gly Gly Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser
            20                  25                  30


Lys Gln Leu Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu
        35                  40                  45


Ser Val Leu Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser
    50                  55                  60


Thr Gln His Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg
65                  70                  75                  80


Leu Gly Leu Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile
                85                  90                  95


Ala Gln Ala Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val
            100                 105                 110


Ala Leu Ile Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala
        115                 120                 125


Val Leu Gln Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly
    130                 135                 140
```

Tyr Pro Val Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp
145   150   155   160

Gln Gly Val Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser
                165   170   175

Asn Leu Ala Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp
            180   185   190

Ile Ala Lys Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr
        195   200   205

Asp Val Asn Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu
    210   215   220

Leu Gly His Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu
225   230   235   240

Leu Gln Gly Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val
                245   250   255

Arg Ile Ala Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp
            260   265   270

Ala Asp Thr Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr
        275   280   285

Gly Ala Tyr Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
    290   295   300

<210> 32
<211> 299
<212> PRT
<213> Streptomyces ambofaciens

<400> 32

Val Met Ser Gly Arg Pro Gly Met Lys Gly Ile Ile Leu Ala Gly Gly
1   5   10   15

Gly Gly Thr Arg Leu Arg Pro Leu Thr Gly Thr Leu Ser Lys Gln Leu
            20   25   30

Leu Pro Val Tyr Asp Lys Pro Met Ile Tyr Tyr Pro Leu Ser Val Leu
        35   40   45

Met Leu Gly Gly Ile Arg Glu Ile Leu Val Val Ser Ser Thr Gln His
    50   55   60

```
Ile Glu Leu Phe Gln Arg Leu Leu Gly Asp Gly Ser Arg Leu Gly Leu
65                  70                  75                  80

Asp Ile Thr Tyr Ala Glu Gln Ala Glu Pro Glu Gly Ile Ala Gln Ala
                85                  90                  95

Ile Thr Ile Gly Thr Asp His Ile Gly Asp Ser Pro Val Ala Leu Ile
            100                 105                 110

Leu Gly Asp Asn Ile Phe His Gly Pro Gly Phe Ser Ala Val Leu Gln
        115                 120                 125

Gly Ser Ile Arg His Leu Asp Gly Cys Val Leu Phe Gly Tyr Pro Val
    130                 135                 140

Ser Asp Pro Lys Arg Tyr Gly Val Gly Glu Ile Asp Asp Gln Gly Val
145                 150                 155                 160

Leu Leu Ser Leu Glu Glu Lys Pro Ala Arg Pro Arg Ser Asn Leu Ala
                165                 170                 175

Val Thr Gly Leu Tyr Leu Tyr Asp Asn Asp Val Val Asp Ile Ala Lys
            180                 185                 190

Asn Ile Arg Pro Ser Ala Arg Gly Glu Leu Glu Ile Thr Asp Val Asn
        195                 200                 205

Arg Thr Tyr Leu Glu Gln Lys Arg Ala Arg Leu Ile Glu Leu Gly His
    210                 215                 220

Gly Phe Ala Trp Leu Asp Met Gly Thr His Asp Ser Leu Leu Gln Gly
225                 230                 235                 240

Gly Gln Tyr Val Gln Leu Ile Glu Gln Arg Gln Gly Val Arg Ile Ala
                245                 250                 255

Cys Ile Glu Glu Ile Ala Leu Arg Met Gly Phe Ile Asp Ala Asp Thr
            260                 265                 270

Leu His Arg Leu Gly Arg Glu Leu Gly Thr Ser Gly Tyr Gly Ala Tyr
        275                 280                 285

Leu Met Glu Val Ala Thr Arg Ala Gly Thr Glu
    290                 295

<210>  33
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<211>  293
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  33

Gly Met Lys Gly Ile Ile Leu Ala Gly Gly Gly Gly Thr Arg Leu Arg
1               5                   10                  15


Pro Leu Thr Gly Thr Leu Ser Lys Gln Leu Leu Pro Val Tyr Asp Lys
            20                  25                  30


Pro Met Ile Tyr Tyr Pro Leu Ser Val Leu Met Leu Gly Gly Ile Arg
        35                  40                  45


Glu Ile Leu Val Val Ser Ser Thr Gln His Ile Glu Leu Phe Gln Arg
    50                  55                  60


Leu Leu Gly Asp Gly Ser Arg Leu Gly Leu Asp Ile Thr Tyr Ala Glu
65                  70                  75                  80


Gln Ala Glu Pro Glu Gly Ile Ala Gln Ala Ile Thr Ile Gly Thr Asp
                85                  90                  95


His Ile Gly Asp Ser Pro Val Ala Leu Ile Leu Gly Asp Asn Ile Phe
            100                 105                 110


His Gly Pro Gly Phe Ser Ala Val Leu Gln Gly Ser Ile Arg His Leu
        115                 120                 125


Asp Gly Cys Val Leu Phe Gly Tyr Pro Val Ser Asp Pro Lys Arg Tyr
    130                 135                 140


Gly Val Gly Glu Ile Asp Asp Gln Gly Val Leu Leu Ser Leu Glu Glu
145                 150                 155                 160


Lys Pro Ala Arg Pro Arg Ser Asn Leu Ala Val Thr Gly Leu Tyr Leu
                165                 170                 175


Tyr Asp Asn Asp Val Val Asp Ile Ala Lys Asn Ile Arg Pro Ser Ala
            180                 185                 190


Arg Gly Glu Leu Glu Ile Thr Asp Val Asn Arg Thr Tyr Leu Glu Gln
        195                 200                 205


Lys Arg Ala Arg Leu Ile Glu Leu Gly His Gly Phe Ala Trp Leu Asp
    210                 215                 220


Met Gly Thr His Asp Ser Leu Leu Gln Gly Gly Gln Tyr Val Gln Leu
```

```
225                 230                 235                 240


Ile Glu Gln Arg Gln Gly Val Arg Ile Ala Cys Ile Glu Glu Ile Ala
                245                 250                 255


Leu Arg Met Gly Phe Ile Asp Ala Asp Thr Leu His Arg Leu Gly Arg
            260                 265                 270


Glu Leu Gly Thr Ser Gly Tyr Gly Ala Tyr Leu Met Glu Val Ala Thr
        275                 280                 285


Arg Ala Gly Thr Glu
    290


<210>  34
<211>  1038
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1038)

<400>  34
gtg cag gca ccg aat gag acg ccg cgc cgg ccc gcc cgc tcc gcc ggc          48
Val Gln Ala Pro Asn Glu Thr Pro Arg Arg Pro Ala Arg Ser Ala Gly
1               5                   10                  15

cga cgg ccg ccg gcc cgg atc ctc gtc acc ggg ggc gcc ggc ttc atc          96
Arg Arg Pro Pro Ala Arg Ile Leu Val Thr Gly Gly Ala Gly Phe Ile
            20                  25                  30

ggc tcg cgc ttc gtg aac gcg ctg ctg gac ggc tcc ctg ccg gag ttc         144
Gly Ser Arg Phe Val Asn Ala Leu Leu Asp Gly Ser Leu Pro Glu Phe
        35                  40                  45

ggc aaa ccc gag gtg agg gtg ctc gac gcg ctc acc tac gcg ggc aac         192
Gly Lys Pro Glu Val Arg Val Leu Asp Ala Leu Thr Tyr Ala Gly Asn
    50                  55                  60

ctg gcc aat ctg gcc ccg gtg ggc gac tgt ccc cgg ctg cgg atc ttc         240
Leu Ala Asn Leu Ala Pro Val Gly Asp Cys Pro Arg Leu Arg Ile Phe
65                  70                  75                  80

ccg ggg gac atc cgc gac cgc ggc gcg gtc acc cag gcg atg gcg ggg         288
Pro Gly Asp Ile Arg Asp Arg Gly Ala Val Thr Gln Ala Met Ala Gly
                85                  90                  95

gtc gac ctg gtg gtg cac ttc gcg gcc gag tcg cac gtg gac cgc tcg         336
Val Asp Leu Val Val His Phe Ala Ala Glu Ser His Val Asp Arg Ser
            100                 105                 110

atc gac gac gcc gac gcc ttc gtg cgc acc aac gtg ctg ggc acc cag         384
Ile Asp Asp Ala Asp Ala Phe Val Arg Thr Asn Val Leu Gly Thr Gln
        115                 120                 125

gtc ctc ctc cag gag gca ctg gcc gta cgc ccc ggg ctg ttc gtg cac         432
```

```
Val Leu Leu Gln Glu Ala Leu Ala Val Arg Pro Gly Leu Phe Val His
    130                 135                 140

gtc tcg acg gac gag gtg tac ggc tcc atc gag gag ggg tcc tgg ccc        480
Val Ser Thr Asp Glu Val Tyr Gly Ser Ile Glu Glu Gly Ser Trp Pro
145                 150                 155                 160

gag gag cac ccg ctg aac ccc aac tcg ccc tac gcc gcc tcg aag gcg        528
Glu Glu His Pro Leu Asn Pro Asn Ser Pro Tyr Ala Ala Ser Lys Ala
                165                 170                 175

tcc tcc gac ctg ctg gcg ctg gcc cac cac cgc acg cac gga ctg ccg        576
Ser Ser Asp Leu Leu Ala Leu Ala His His Arg Thr His Gly Leu Pro
            180                 185                 190

gtg tgc gtc acc cgc tgc tcc aac aac tac ggg ccc tac cag tac ccg        624
Val Cys Val Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr Gln Tyr Pro
        195                 200                 205

gag aag atc atc ccg ctg ttc acc agc agc ctc ctc gac ggc ggg acc        672
Glu Lys Ile Ile Pro Leu Phe Thr Ser Ser Leu Leu Asp Gly Gly Thr
    210                 215                 220

gtc ccg ctc tac ggg gac ggc ggc aac cgg cgc gac tgg ctg cac gtg        720
Val Pro Leu Tyr Gly Asp Gly Gly Asn Arg Arg Asp Trp Leu His Val
225                 230                 235                 240

gac gac cac tgc cgg ggc atc gcc ctg gtg gcc cgg ggc ggc cgg ccc        768
Asp Asp His Cys Arg Gly Ile Ala Leu Val Ala Arg Gly Gly Arg Pro
                245                 250                 255

ggc gag gtc tac aac atc ggc ggc ggc acc gag ctg agc aac gtc gag        816
Gly Glu Val Tyr Asn Ile Gly Gly Gly Thr Glu Leu Ser Asn Val Glu
            260                 265                 270

ctc acg gag cgt ctg ctg aaa ctg tgc gga gcc gac tgg tcg gcg gtg        864
Leu Thr Glu Arg Leu Leu Lys Leu Cys Gly Ala Asp Trp Ser Ala Val
        275                 280                 285

cgg cgg gtg ccc gac cgc aag ggc cac gac cgg cgc tac tcc gtc gac        912
Arg Arg Val Pro Asp Arg Lys Gly His Asp Arg Arg Tyr Ser Val Asp
    290                 295                 300

tac acc aag atc gcg gac gag ctg ggt tac gcg ccg cgg atc acc atc        960
Tyr Thr Lys Ile Ala Asp Glu Leu Gly Tyr Ala Pro Arg Ile Thr Ile
305                 310                 315                 320

gac gaa ggg ctg gag cgg acc gtg cac tgg tac cgg gag aac cgc gcg       1008
Asp Glu Gly Leu Glu Arg Thr Val His Trp Tyr Arg Glu Asn Arg Ala
                325                 330                 335

tgg tgg gcg ccc gcg aag agg ggg cga tga                               1038
Trp Trp Ala Pro Ala Lys Arg Gly Arg
            340                 345


<210>  35
<211>  345
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  35
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Val Gln Ala Pro Asn Glu Thr Pro Arg Arg Pro Ala Arg Ser Ala Gly
1               5                   10                  15

Arg Arg Pro Pro Ala Arg Ile Leu Val Thr Gly Gly Ala Gly Phe Ile
            20                  25                  30

Gly Ser Arg Phe Val Asn Ala Leu Leu Asp Gly Ser Leu Pro Glu Phe
        35                  40                  45

Gly Lys Pro Glu Val Arg Val Leu Asp Ala Leu Thr Tyr Ala Gly Asn
    50                  55                  60

Leu Ala Asn Leu Ala Pro Val Gly Asp Cys Pro Arg Leu Arg Ile Phe
65                  70                  75                  80

Pro Gly Asp Ile Arg Asp Arg Gly Ala Val Thr Gln Ala Met Ala Gly
                85                  90                  95

Val Asp Leu Val Val His Phe Ala Ala Glu Ser His Val Asp Arg Ser
            100                 105                 110

Ile Asp Asp Ala Asp Ala Phe Val Arg Thr Asn Val Leu Gly Thr Gln
        115                 120                 125

Val Leu Leu Gln Glu Ala Leu Ala Val Arg Pro Gly Leu Phe Val His
    130                 135                 140

Val Ser Thr Asp Glu Val Tyr Gly Ser Ile Glu Glu Gly Ser Trp Pro
145                 150                 155                 160

Glu Glu His Pro Leu Asn Pro Asn Ser Pro Tyr Ala Ala Ser Lys Ala
                165                 170                 175

Ser Ser Asp Leu Leu Ala Leu Ala His His Arg Thr His Gly Leu Pro
            180                 185                 190

Val Cys Val Thr Arg Cys Ser Asn Asn Tyr Gly Pro Tyr Gln Tyr Pro
        195                 200                 205

Glu Lys Ile Ile Pro Leu Phe Thr Ser Ser Leu Leu Asp Gly Gly Thr
    210                 215                 220

Val Pro Leu Tyr Gly Asp Gly Gly Asn Arg Arg Asp Trp Leu His Val
225                 230                 235                 240

Asp Asp His Cys Arg Gly Ile Ala Leu Val Ala Arg Gly Gly Arg Pro
                245                 250                 255
```

```
Gly Glu Val Tyr Asn Ile Gly Gly Gly Thr Glu Leu Ser Asn Val Glu
            260                 265                 270


Leu Thr Glu Arg Leu Leu Lys Leu Cys Gly Ala Asp Trp Ser Ala Val
        275                 280                 285


Arg Arg Val Pro Asp Arg Lys Gly His Asp Arg Arg Tyr Ser Val Asp
    290                 295                 300


Tyr Thr Lys Ile Ala Asp Glu Leu Gly Tyr Ala Pro Arg Ile Thr Ile
305                 310                 315                 320


Asp Glu Gly Leu Glu Arg Thr Val His Trp Tyr Arg Glu Asn Arg Ala
                325                 330                 335


Trp Trp Ala Pro Ala Lys Arg Gly Arg
            340                 345


<210>  36
<211>  804
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(804)

<220>
<221>  CDS2
<222>  (7)..(804)

<220>
<221>  CDS3
<222>  (22)..(804)

<400>  36
atg acg gtg acg acc gca tcc gtg gac ccg ctc gac ctg tgg ctc cgc       48
Met Thr Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg
1               5                   10                  15

cgg tac cag ccg tcc gcg tca ccc gcc gtc cgg ctg gtg tgc ttc ccg       96
Arg Tyr Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro
            20                  25                  30

cac gcg ggc ggc tcg gcg agt tcg ttc ctg ccg ttc acc cgg cag ctg      144
His Ala Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu
        35                  40                  45

ccg gac cgg atc gag gtc gtg gcc gtc cag tac ccc ggg cgc cag gac      192
Pro Asp Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp
    50                  55                  60

cgc agg agc gaa ccg ctg gtc gac acc atc gag gga ctg gcc gag ccc      240
Arg Arg Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro
65                  70                  75                  80
```

```
ctg gcc ggc ctg ctg gag gcg cag gcc ggc ccc ccg gtg gtg ctg ttc         288
Leu Ala Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe
                85                  90                  95

ggg cac agc atg ggc gcg ctg gtg gcc tac gag gtc gcc cgc gcg ctc         336
Gly His Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu
            100                 105                 110

cag cgg cgg gga gcg gct ccg gtg cgc ctg gtg gtc tcc ggg cgc cgg         384
Gln Arg Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg
        115                 120                 125

gcc ccc gcc gtc gac cgg ccg atg acc gtg cac ctc tac gac gac gac         432
Ala Pro Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp
    130                 135                 140

cgg ctg gtc gag gaa ctc cgc aag ctc gac ggc acc gac agc cag gtg         480
Arg Leu Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val
145                 150                 155                 160

ttc gcc gat ccg gag ctg ctc cgg ctg gtg ctg ccc gtg atc cgc aac         528
Phe Ala Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn
                165                 170                 175

gac tac cgg gcc gtg gcg gcc tac gcc cac cgc ccg ggg gcg ccg ctg         576
Asp Tyr Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu
            180                 185                 190

gac tgc ccc ctc acc gtg ttc acc ggc gcc gac gac ccc acc gtg acc         624
Asp Cys Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr
        195                 200                 205

gcg gcc gag gcg gcg gcc tgg cac gag gcg gcg gcg tcc gac gtc gag         672
Ala Ala Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu
    210                 215                 220

acg cgc acc ttc ccc ggt ggc cac ttc ttc ccg tac cag cgg acc gcg         720
Thr Arg Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala
225                 230                 235                 240

gag gtg tgc ggg gcc ctg gtc gac acg ctc gag ccg ctg ctg tcg gcc         768
Glu Val Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala
                245                 250                 255

ggg acg cgc ggt gtc cgg cgg gtc cgc ccg ggg tga                         804
Gly Thr Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265


<210>  37
<211>  267
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  37

Met Thr Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg
1               5                   10                  15


Arg Tyr Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro
            20                  25                  30
```

```
His Ala Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu
        35                  40                  45

Pro Asp Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp
    50                  55                  60

Arg Arg Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro
65                  70                  75                  80

Leu Ala Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe
                85                  90                  95

Gly His Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu
            100                 105                 110

Gln Arg Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg
        115                 120                 125

Ala Pro Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp
    130                 135                 140

Arg Leu Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val
145                 150                 155                 160

Phe Ala Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn
                165                 170                 175

Asp Tyr Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu
            180                 185                 190

Asp Cys Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr
        195                 200                 205

Ala Ala Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu
    210                 215                 220

Thr Arg Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala
225                 230                 235                 240

Glu Val Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala
                245                 250                 255

Gly Thr Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265

<210>  38
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```
<211>  265
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  38

Val Thr Thr Ala Ser Val Asp Pro Leu Asp Leu Trp Leu Arg Arg Tyr
1               5                   10                  15


Gln Pro Ser Ala Ser Pro Ala Val Arg Leu Val Cys Phe Pro His Ala
            20                  25                  30


Gly Gly Ser Ala Ser Ser Phe Leu Pro Phe Thr Arg Gln Leu Pro Asp
        35                  40                  45


Arg Ile Glu Val Val Ala Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg
    50                  55                  60


Ser Glu Pro Leu Val Asp Thr Ile Glu Gly Leu Ala Glu Pro Leu Ala
65                  70                  75                  80


Gly Leu Leu Glu Ala Gln Ala Gly Pro Pro Val Val Leu Phe Gly His
                85                  90                  95


Ser Met Gly Ala Leu Val Ala Tyr Glu Val Ala Arg Ala Leu Gln Arg
            100                 105                 110


Arg Gly Ala Ala Pro Val Arg Leu Val Val Ser Gly Arg Arg Ala Pro
        115                 120                 125


Ala Val Asp Arg Pro Met Thr Val His Leu Tyr Asp Asp Asp Arg Leu
    130                 135                 140


Val Glu Glu Leu Arg Lys Leu Asp Gly Thr Asp Ser Gln Val Phe Ala
145                 150                 155                 160


Asp Pro Glu Leu Leu Arg Leu Val Leu Pro Val Ile Arg Asn Asp Tyr
                165                 170                 175


Arg Ala Val Ala Ala Tyr Ala His Arg Pro Gly Ala Pro Leu Asp Cys
            180                 185                 190


Pro Leu Thr Val Phe Thr Gly Ala Asp Asp Pro Thr Val Thr Ala Ala
        195                 200                 205


Glu Ala Ala Ala Trp His Glu Ala Ala Ala Ser Asp Val Glu Thr Arg
    210                 215                 220


Thr Phe Pro Gly Gly His Phe Phe Pro Tyr Gln Arg Thr Ala Glu Val
```

```
225                 230                 235                 240


Cys Gly Ala Leu Val Asp Thr Leu Glu Pro Leu Leu Ser Ala Gly Thr
                245                 250                 255


Arg Gly Val Arg Arg Val Arg Pro Gly
            260                 265


<210>  39
<211>  260
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  39

Val Asp Pro Leu Asp Leu Trp Leu Arg Arg Tyr Gln Pro Ser Ala Ser
1               5                   10                  15


Pro Ala Val Arg Leu Val Cys Phe Pro His Ala Gly Gly Ser Ala Ser
            20                  25                  30


Ser Phe Leu Pro Phe Thr Arg Gln Leu Pro Asp Arg Ile Glu Val Val
        35                  40                  45


Ala Val Gln Tyr Pro Gly Arg Gln Asp Arg Arg Ser Glu Pro Leu Val
    50                  55                  60


Asp Thr Ile Glu Gly Leu Ala Glu Pro Leu Ala Gly Leu Leu Glu Ala
65                  70                  75                  80


Gln Ala Gly Pro Pro Val Val Leu Phe Gly His Ser Met Gly Ala Leu
                85                  90                  95


Val Ala Tyr Glu Val Ala Arg Ala Leu Gln Arg Arg Gly Ala Ala Pro
            100                 105                 110


Val Arg Leu Val Val Ser Gly Arg Arg Ala Pro Ala Val Asp Arg Pro
        115                 120                 125


Met Thr Val His Leu Tyr Asp Asp Asp Arg Leu Val Glu Glu Leu Arg
    130                 135                 140


Lys Leu Asp Gly Thr Asp Ser Gln Val Phe Ala Asp Pro Glu Leu Leu
145                 150                 155                 160


Arg Leu Val Leu Pro Val Ile Arg Asn Asp Tyr Arg Ala Val Ala Ala
                165                 170                 175


Tyr Ala His Arg Pro Gly Ala Pro Leu Asp Cys Pro Leu Thr Val Phe
```

```
        180                     185                     190

Thr Gly Ala Asp Asp Pro Thr Val Thr Ala Ala Glu Ala Ala Ala Trp
    195                     200                     205

His Glu Ala Ala Ala Ser Asp Val Glu Thr Arg Thr Phe Pro Gly Gly
    210                     215                     220

His Phe Phe Pro Tyr Gln Arg Thr Ala Glu Val Cys Gly Ala Leu Val
225                     230                     235                     240

Asp Thr Leu Glu Pro Leu Leu Ser Ala Gly Thr Arg Gly Val Arg Arg
                245                     250                     255

Val Arg Pro Gly
            260


<210>  40
<211>  1410
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
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<222>  (1)..(1410)

<220>
<221>  CDS2
<222>  (46)..(1410)

<400>  40
gtg ggc acg gtc gag tac gcc gtc cac cgg cgt acc gcg gaa cgg gtg        48
Val Gly Thr Val Glu Tyr Ala Val His Arg Arg Thr Ala Glu Arg Val
1               5                   10                  15

agg gtc tcc gcc gac acc ctg gac agc ccg gtc acc gcg ctg gcg gag        96
Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala Glu
            20                  25                  30

gtg ccc cgc tgg ctg gag gaa tac cac cgg gcg cac cgc ttc cac gtc       144
Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His Val
        35                  40                  45

gag ccg atc ccc ttc gac cgg ctc cgg cgg tgg tcc ttc gag ccg ggc       192
Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro Gly
    50                  55                  60

acc ggc gac ctg cgg cac gag acg ggc cgc ttc ttc tcc gtg gag ggg       240
Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu Gly
65                  70                  75                  80

ctg cgc acc agc tcg gac gcc gat ccg gtc gcc cgt gtc cag ccg atc       288
Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro Ile
                85                  90                  95

atc gtg cag ccc gag gtg ggg ctg ctc ggc atc ctg gcc cgg gag ttc       336
```

```
Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu Phe
            100                 105                 110

gac ggg gtg ctg cac ttc ctg atg cag gcc aaa ccc gag ccc ggc aac      384
Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly Asn
        115                 120                 125

gtc aac ggg ctg cag atc tcc ccc acg gtg cag gcc acg cgc agc aac      432
Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser Asn
    130                 135                 140

ttc gac gag gtg cac cac ggc cgg tcc acc ccg ttc ctc gac cac ttc      480
Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His Phe
145                 150                 155                 160

atc cac cgc ccc ggc cgc cgg gtc ctg atc gac agc atc cag tcc gaa      528
Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser Glu
                165                 170                 175

cag ggc gac tgg ttc ctg cac aag cgc aac cgc aac atg gtc gtc gag      576
Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val Glu
            180                 185                 190

atc gac acc gac atc gag gcc gac gcc gcg ttc cgc tgg ctg acc ctc      624
Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr Leu
        195                 200                 205

ggg cag atc cgc cgg ctg atg ctc cag gac gac ctc gtc aac atg gac      672
Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met Asp
    210                 215                 220

acc cgc agt gtg ctg gcc tgt ctg ccc acc gcg cac ggc acg ccc gac      720
Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro Asp
225                 230                 235                 240

gac ggt gac gac tcc ttc ccg gcg gcg ctg cgc cgc tcc ctc tac ggg      768
Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr Gly
                245                 250                 255

gag acc gcg ccg ttg cac gat ctg cac gcc atc acc agc tgc ctc acc      816
Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu Thr
            260                 265                 270

gac gtc cgg gcg ctg cgg gtg ctg cgc cag cag agc gtg ccg ctc gac      864
Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu Asp
        275                 280                 285

gac gcc cgg cgg gac ggc tgg gag cgg acc ggg agc gcg atc cgg cat      912
Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg His
    290                 295                 300

cgc agc ggc agg cat ttc gag atc atg gcg gtg gag gtg acc gcg gag      960
Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala Glu
305                 310                 315                 320

cgc cgt gaa gtg gcc tcg tgg acc cag ccg ttg ctg cgc ccg tgc tcg     1008
Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys Ser
                325                 330                 335

cag gga ctg gcg gcc ctg atc acc cgg cgg atc aac ggg gtg ctg cac     1056
Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu His
            340                 345                 350
```

```
gcc ctg gtg gcg gcg cgg tcg gag gtc ggc acg ctc aac gtc gcc gag     1104
Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala Glu
        355                 360                 365

ttc gga ccg acc gtc cag tgc cgg ccc gac gag gcg gac ggc cag tcg     1152
Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln Ser
    370                 375                 380

ccc ccg tac ctg gac cgg gtg ctg acg gcc gga gcc gac cgc gtc cgc     1200
Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val Arg
385                 390                 395                 400

tac gac gtg gtg cag tcg gag gag ggc ggg cgc ttc tac cac gcg cgc     1248
Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala Arg
                405                 410                 415

aac cgc tat ctg gtg gtc gag gcg ggg ccg gag ctc gac acg ggc tgc     1296
Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly Cys
            420                 425                 430

ccg ccc ggc ttc tgc tgg gct acc ttc ggc cag ctc acc gaa ctg ctc     1344
Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu Leu
        435                 440                 445

gcg cac ggc aac tat ctc aac gtc gaa ctc cgc acc ctc atg gcg tgc     1392
Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala Cys
    450                 455                 460

gca cac gcc tcc tac tga                                             1410
Ala His Ala Ser Tyr
465


<210>  41
<211>  469
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  41

Val Gly Thr Val Glu Tyr Ala Val His Arg Arg Thr Ala Glu Arg Val
1               5                   10                  15


Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala Glu
            20                  25                  30


Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His Val
        35                  40                  45


Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro Gly
    50                  55                  60


Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu Gly
65                  70                  75                  80


Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro Ile
                85                  90                  95
```

```
Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu Phe
            100                 105                 110

Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly Asn
        115                 120                 125

Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser Asn
    130                 135                 140

Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His Phe
145                 150                 155                 160

Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser Glu
                165                 170                 175

Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val Glu
            180                 185                 190

Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr Leu
        195                 200                 205

Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met Asp
    210                 215                 220

Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro Asp
225                 230                 235                 240

Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr Gly
                245                 250                 255

Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu Thr
            260                 265                 270

Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu Asp
        275                 280                 285

Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg His
    290                 295                 300

Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala Glu
305                 310                 315                 320

Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys Ser
                325                 330                 335

Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu His
            340                 345                 350
```

```
Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala Glu
        355                 360                 365

Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln Ser
    370                 375                 380

Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val Arg
385                 390                 395                 400

Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala Arg
                405                 410                 415

Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly Cys
            420                 425                 430

Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu Leu
        435                 440                 445

Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala Cys
    450                 455                 460

Ala His Ala Ser Tyr
465


<210>  42
<211>  454
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  42

Val Arg Val Ser Ala Asp Thr Leu Asp Ser Pro Val Thr Ala Leu Ala
1               5                   10                  15

Glu Val Pro Arg Trp Leu Glu Glu Tyr His Arg Ala His Arg Phe His
            20                  25                  30

Val Glu Pro Ile Pro Phe Asp Arg Leu Arg Arg Trp Ser Phe Glu Pro
        35                  40                  45

Gly Thr Gly Asp Leu Arg His Glu Thr Gly Arg Phe Phe Ser Val Glu
    50                  55                  60

Gly Leu Arg Thr Ser Ser Asp Ala Asp Pro Val Ala Arg Val Gln Pro
65                  70                  75                  80

Ile Ile Val Gln Pro Glu Val Gly Leu Leu Gly Ile Leu Ala Arg Glu
                85                  90                  95
```

```
Phe Asp Gly Val Leu His Phe Leu Met Gln Ala Lys Pro Glu Pro Gly
            100                 105                 110

Asn Val Asn Gly Leu Gln Ile Ser Pro Thr Val Gln Ala Thr Arg Ser
        115                 120                 125

Asn Phe Asp Glu Val His His Gly Arg Ser Thr Pro Phe Leu Asp His
    130                 135                 140

Phe Ile His Arg Pro Gly Arg Arg Val Leu Ile Asp Ser Ile Gln Ser
145                 150                 155                 160

Glu Gln Gly Asp Trp Phe Leu His Lys Arg Asn Arg Asn Met Val Val
                165                 170                 175

Glu Ile Asp Thr Asp Ile Glu Ala Asp Ala Ala Phe Arg Trp Leu Thr
            180                 185                 190

Leu Gly Gln Ile Arg Arg Leu Met Leu Gln Asp Asp Leu Val Asn Met
        195                 200                 205

Asp Thr Arg Ser Val Leu Ala Cys Leu Pro Thr Ala His Gly Thr Pro
    210                 215                 220

Asp Asp Gly Asp Asp Ser Phe Pro Ala Ala Leu Arg Arg Ser Leu Tyr
225                 230                 235                 240

Gly Glu Thr Ala Pro Leu His Asp Leu His Ala Ile Thr Ser Cys Leu
                245                 250                 255

Thr Asp Val Arg Ala Leu Arg Val Leu Arg Gln Gln Ser Val Pro Leu
            260                 265                 270

Asp Asp Ala Arg Arg Asp Gly Trp Glu Arg Thr Gly Ser Ala Ile Arg
        275                 280                 285

His Arg Ser Gly Arg His Phe Glu Ile Met Ala Val Glu Val Thr Ala
    290                 295                 300

Glu Arg Arg Glu Val Ala Ser Trp Thr Gln Pro Leu Leu Arg Pro Cys
305                 310                 315                 320

Ser Gln Gly Leu Ala Ala Leu Ile Thr Arg Arg Ile Asn Gly Val Leu
                325                 330                 335

His Ala Leu Val Ala Ala Arg Ser Glu Val Gly Thr Leu Asn Val Ala
```

```
            340                 345                 350

Glu Phe Gly Pro Thr Val Gln Cys Arg Pro Asp Glu Ala Asp Gly Gln
        355                 360                 365

Ser Pro Pro Tyr Leu Asp Arg Val Leu Thr Ala Gly Ala Asp Arg Val
    370                 375                 380

Arg Tyr Asp Val Val Gln Ser Glu Glu Gly Gly Arg Phe Tyr His Ala
385                 390                 395                 400

Arg Asn Arg Tyr Leu Val Val Glu Ala Gly Pro Glu Leu Asp Thr Gly
                405                 410                 415

Cys Pro Pro Gly Phe Cys Trp Ala Thr Phe Gly Gln Leu Thr Glu Leu
            420                 425                 430

Leu Ala His Gly Asn Tyr Leu Asn Val Glu Leu Arg Thr Leu Met Ala
        435                 440                 445

Cys Ala His Ala Ser Tyr
    450


<210>  43
<211>  1248
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1248)

<400>  43
atg ccg ggc ggg acg gac ggc gac tgc gcg cgg acg gcg gcc cgg cgt        48
Met Pro Gly Gly Thr Asp Gly Asp Cys Ala Arg Thr Ala Ala Arg Arg
1               5                   10                  15

cga acg cac ctg ccc gag tcc gga cga gac agc gcg acg cga gag gcg        96
Arg Thr His Leu Pro Glu Ser Gly Arg Asp Ser Ala Thr Arg Glu Ala
            20                  25                  30

aaa atg atc aat ctc ttc cag ccc cag atg ggg gcc gag gaa ctg gcg       144
Lys Met Ile Asn Leu Phe Gln Pro Gln Met Gly Ala Glu Glu Leu Ala
        35                  40                  45

gcg gtg tcc gag gtc ttc gac gac caa tgg ctc ggt cac gga ccc cgg       192
Ala Val Ser Glu Val Phe Asp Asp Gln Trp Leu Gly His Gly Pro Arg
    50                  55                  60

acc gcg gcg ttc gag tcc gcg ttc gcc gag cac ctc ggg gtc ggc ccc       240
Thr Ala Ala Phe Glu Ser Ala Phe Ala Glu His Leu Gly Val Gly Pro
65                  70                  75                  80

gag cac gtc gtc ttc ctc aac tcg ggc acc gcc ggc ctc ttc ctg gcc       288
```

```
Glu His Val Val Phe Leu Asn Ser Gly Thr Ala Gly Leu Phe Leu Ala
                85                  90                  95

ctg gag tcg ctc ggc ctg cgg ccc ggc gac gag gtc gtg ctc ccc tcg          336
Leu Glu Ser Leu Gly Leu Arg Pro Gly Asp Glu Val Val Leu Pro Ser
            100                 105                 110

ccc agc ttc ctc gcc gcg gcg aac gcc gta cag ctc tcg gga gcg cgc          384
Pro Ser Phe Leu Ala Ala Ala Asn Ala Val Gln Leu Ser Gly Ala Arg
        115                 120                 125

ccg gtg ttc tgc gac acc gac ccg cgg acg ctg aac ccc gcc ctg gag          432
Pro Val Phe Cys Asp Thr Asp Pro Arg Thr Leu Asn Pro Ala Leu Glu
    130                 135                 140

cac atc gag gcg gcc gtc acc ccg cgc acc agg gcc gtc atc gcg ctc          480
His Ile Glu Ala Ala Val Thr Pro Arg Thr Arg Ala Val Ile Ala Leu
145                 150                 155                 160

cac tac ggc ggc cac ccc ggc gac atc gtg cgc atc gcc gag cgc tgc          528
His Tyr Gly Gly His Pro Gly Asp Ile Val Arg Ile Ala Glu Arg Cys
                165                 170                 175

cgg gag cgg ggc atc acc ctg atc gag gac gcc gcg tgc tcc gtg gcc          576
Arg Glu Arg Gly Ile Thr Leu Ile Glu Asp Ala Ala Cys Ser Val Ala
            180                 185                 190

tcc cgc gtc gac ggc cga ccg gtc ggc acc ttc ggc gac ctc gcc atg          624
Ser Arg Val Asp Gly Arg Pro Val Gly Thr Phe Gly Asp Leu Ala Met
        195                 200                 205

tgg agc ttc gac gcc atg aag gtc ctg gtc acc ggc gac gga ggg atg          672
Trp Ser Phe Asp Ala Met Lys Val Leu Val Thr Gly Asp Gly Gly Met
    210                 215                 220

atc tac gtc aag gac ccc ggg gcg gcc gcc cgg atc cgg cgc ctc gcc          720
Ile Tyr Val Lys Asp Pro Gly Ala Ala Ala Arg Ile Arg Arg Leu Ala
225                 230                 235                 240

tac cac ggc ctc acg cgg tcc agc ggc ctg gga tac gcc agg gtc tcg          768
Tyr His Gly Leu Thr Arg Ser Ser Gly Leu Gly Tyr Ala Arg Val Ser
                245                 250                 255

gcg cgc tgg tgg gag atg gac gtc ccc gaa ccg ggc cgc cgc gtc atc          816
Ala Arg Trp Trp Glu Met Asp Val Pro Glu Pro Gly Arg Arg Val Ile
            260                 265                 270

ggg aac gac ctc acc gcg gcc atc ggc gcg gtc cag ttg cgc cgg ctt          864
Gly Asn Asp Leu Thr Ala Ala Ile Gly Ala Val Gln Leu Arg Arg Leu
        275                 280                 285

ccc ggc ttc gtg gcc cgc cgc agg gag atc gtc gcc ctg tac gac agc          912
Pro Gly Phe Val Ala Arg Arg Arg Glu Ile Val Ala Leu Tyr Asp Ser
    290                 295                 300

gaa ctg agc tcg ctg gag ggc gtg ctg aca ccg ccc gcg cca ccc gcg          960
Glu Leu Ser Ser Leu Glu Gly Val Leu Thr Pro Pro Ala Pro Pro Ala
305                 310                 315                 320

ggg cac gag tcc acg cac tac ttc tac tgg atc cag ctg gcc ccc ggc         1008
Gly His Glu Ser Thr His Tyr Phe Tyr Trp Ile Gln Leu Ala Pro Gly
                325                 330                 335
```

```
gtc cgg gac cgg gtg gca cgc gac ctg ctc acc gac ggc atc tac acc       1056
Val Arg Asp Arg Val Ala Arg Asp Leu Leu Thr Asp Gly Ile Tyr Thr
            340                 345                 350

acc ttc cgc tac gca cct ctg cac aag gtg ccc gcc tac ggc cac acc       1104
Thr Phe Arg Tyr Ala Pro Leu His Lys Val Pro Ala Tyr Gly His Thr
        355                 360                 365

gga ggc gaa ctg ccc ggc gtg gag cgg gcg tcc gaa cgg acc ctg tgc       1152
Gly Gly Glu Leu Pro Gly Val Glu Arg Ala Ser Glu Arg Thr Leu Cys
    370                 375                 380

ctg ccc ctg cac ccc ggc ctg tcg gac gcc gac gtc cgc acc gtc gtg       1200
Leu Pro Leu His Pro Gly Leu Ser Asp Ala Asp Val Arg Thr Val Val
385                 390                 395                 400

tcc tcc ctg cgc aga gcc ctg agc gcc gcg gat ccg gcc ccc gcc tga       1248
Ser Ser Leu Arg Arg Ala Leu Ser Ala Ala Asp Pro Ala Pro Ala
                405                 410                 415


<210>  44
<211>  415
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  44

Met Pro Gly Gly Thr Asp Gly Asp Cys Ala Arg Thr Ala Ala Arg Arg
1               5                   10                  15


Arg Thr His Leu Pro Glu Ser Gly Arg Asp Ser Ala Thr Arg Glu Ala
            20                  25                  30


Lys Met Ile Asn Leu Phe Gln Pro Gln Met Gly Ala Glu Glu Leu Ala
        35                  40                  45


Ala Val Ser Glu Val Phe Asp Asp Gln Trp Leu Gly His Gly Pro Arg
    50                  55                  60


Thr Ala Ala Phe Glu Ser Ala Phe Ala Glu His Leu Gly Val Gly Pro
65                  70                  75                  80


Glu His Val Val Phe Leu Asn Ser Gly Thr Ala Gly Leu Phe Leu Ala
                85                  90                  95


Leu Glu Ser Leu Gly Leu Arg Pro Gly Asp Glu Val Val Leu Pro Ser
            100                 105                 110


Pro Ser Phe Leu Ala Ala Ala Asn Ala Val Gln Leu Ser Gly Ala Arg
        115                 120                 125


Pro Val Phe Cys Asp Thr Asp Pro Arg Thr Leu Asn Pro Ala Leu Glu
    130                 135                 140
```

```
His Ile Glu Ala Ala Val Thr Pro Arg Thr Arg Ala Val Ile Ala Leu
145                 150                 155                 160


His Tyr Gly Gly His Pro Gly Asp Ile Val Arg Ile Ala Glu Arg Cys
                165                 170                 175


Arg Glu Arg Gly Ile Thr Leu Ile Glu Asp Ala Ala Cys Ser Val Ala
            180                 185                 190


Ser Arg Val Asp Gly Arg Pro Val Gly Thr Phe Gly Asp Leu Ala Met
        195                 200                 205


Trp Ser Phe Asp Ala Met Lys Val Leu Val Thr Gly Asp Gly Gly Met
    210                 215                 220


Ile Tyr Val Lys Asp Pro Gly Ala Ala Ala Arg Ile Arg Arg Leu Ala
225                 230                 235                 240


Tyr His Gly Leu Thr Arg Ser Ser Gly Leu Gly Tyr Ala Arg Val Ser
                245                 250                 255


Ala Arg Trp Trp Glu Met Asp Val Pro Glu Pro Gly Arg Arg Val Ile
            260                 265                 270


Gly Asn Asp Leu Thr Ala Ala Ile Gly Ala Val Gln Leu Arg Arg Leu
        275                 280                 285


Pro Gly Phe Val Ala Arg Arg Arg Glu Ile Val Ala Leu Tyr Asp Ser
    290                 295                 300


Glu Leu Ser Ser Leu Glu Gly Val Leu Thr Pro Pro Ala Pro Pro Ala
305                 310                 315                 320


Gly His Glu Ser Thr His Tyr Phe Tyr Trp Ile Gln Leu Ala Pro Gly
                325                 330                 335


Val Arg Asp Arg Val Ala Arg Asp Leu Leu Thr Asp Gly Ile Tyr Thr
            340                 345                 350


Thr Phe Arg Tyr Ala Pro Leu His Lys Val Pro Ala Tyr Gly His Thr
        355                 360                 365


Gly Gly Glu Leu Pro Gly Val Glu Arg Ala Ser Glu Arg Thr Leu Cys
    370                 375                 380


Leu Pro Leu His Pro Gly Leu Ser Asp Ala Asp Val Arg Thr Val Val
385                 390                 395                 400
```

```
Ser Ser Leu Arg Arg Ala Leu Ser Ala Ala Asp Pro Ala Pro Ala
                405                 410                 415


<210>  45
<211>  720
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(720)

<400>  45
atg tac gag aac gac agt gcc gcc gag gtc tac gac ctg ctc tac cag       48
Met Tyr Glu Asn Asp Ser Ala Ala Glu Val Tyr Asp Leu Leu Tyr Gln
1               5                   10                  15

gac cgc aag gac tac gcg ggt gag gcc gcc cgg gtc acc gac ctg atc       96
Asp Arg Lys Asp Tyr Ala Gly Glu Ala Ala Arg Val Thr Asp Leu Ile
            20                  25                  30

cgg gaa cgt acg ccg gac gcg gcc agc ctg ctc gac atc gcg tgc ggc      144
Arg Glu Arg Thr Pro Asp Ala Ala Ser Leu Leu Asp Ile Ala Cys Gly
        35                  40                  45

acc ggt acc cac ctg gag gcc ttc gcc aag ctc tac gac cgc gtg agc      192
Thr Gly Thr His Leu Glu Ala Phe Ala Lys Leu Tyr Asp Arg Val Ser
    50                  55                  60

ggc ctg gag ctg tcc gag tgg atg gcg gcc cgc gcc gag gag cgg ctc      240
Gly Leu Glu Leu Ser Glu Trp Met Ala Ala Arg Ala Glu Glu Arg Leu
65                  70                  75                  80

ccc ggc gtc acc ctc cac cgc ggt gac atg cgg gcg ttc gac ctc ggc      288
Pro Gly Val Thr Leu His Arg Gly Asp Met Arg Ala Phe Asp Leu Gly
                85                  90                  95

gag acg ttc gac gcc gtg gtc tgc atg ttc agc tcg atc ggg tac ctg      336
Glu Thr Phe Asp Ala Val Val Cys Met Phe Ser Ser Ile Gly Tyr Leu
            100                 105                 110

gag acc acg gcc gac ctg gag gac gcc gtc gcc gcc atg gcg cgg cac      384
Glu Thr Thr Ala Asp Leu Glu Asp Ala Val Ala Ala Met Ala Arg His
        115                 120                 125

ctg acc gcg gac ggt gtc ctg gcc gtc gaa ccg tgg tac ttc ccc gac      432
Leu Thr Ala Asp Gly Val Leu Ala Val Glu Pro Trp Tyr Phe Pro Asp
    130                 135                 140

acc ttc ctg gac ggc cac gtc tcc acc cac gcc ctg cgg acg gca ccg      480
Thr Phe Leu Asp Gly His Val Ser Thr His Ala Leu Arg Thr Ala Pro
145                 150                 155                 160

ggc gac cag ggc gtc gcc cgt gtc tcc cac tcg acc cgg gag ggc ggg      528
Gly Asp Gln Gly Val Ala Arg Val Ser His Ser Thr Arg Glu Gly Gly
                165                 170                 175

cgg acc cgg atg gag atc cac tac ctg atc gcg cac acc gcg gag ggc      576
Arg Thr Arg Met Glu Ile His Tyr Leu Ile Ala His Thr Ala Glu Gly
```

```
            180                 185                 190

atc cgg cac cgc agc gag gtg gac tac ctc acg ctg ttc tcg cgt gcg      624
Ile Arg His Arg Ser Glu Val Asp Tyr Leu Thr Leu Phe Ser Arg Ala
        195                 200                 205

gag tac gag gcc gcg tac cgc aag gcc ggc ctg gac gtc gag tac gtc      672
Glu Tyr Glu Ala Ala Tyr Arg Lys Ala Gly Leu Asp Val Glu Tyr Val
    210                 215                 220

gtg acg ggc gag ggc tca ccg ggc ttc ttc ctc ggc acg cgt cgc tga      720
Val Thr Gly Glu Gly Ser Pro Gly Phe Phe Leu Gly Thr Arg Arg
225                 230                 235


<210>  46
<211>  239
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  46

Met Tyr Glu Asn Asp Ser Ala Ala Glu Val Tyr Asp Leu Leu Tyr Gln
1               5                   10                  15


Asp Arg Lys Asp Tyr Ala Gly Glu Ala Ala Arg Val Thr Asp Leu Ile
            20                  25                  30


Arg Glu Arg Thr Pro Asp Ala Ala Ser Leu Leu Asp Ile Ala Cys Gly
        35                  40                  45


Thr Gly Thr His Leu Glu Ala Phe Ala Lys Leu Tyr Asp Arg Val Ser
    50                  55                  60


Gly Leu Glu Leu Ser Glu Trp Met Ala Ala Arg Ala Glu Glu Arg Leu
65                  70                  75                  80


Pro Gly Val Thr Leu His Arg Gly Asp Met Arg Ala Phe Asp Leu Gly
                85                  90                  95


Glu Thr Phe Asp Ala Val Val Cys Met Phe Ser Ser Ile Gly Tyr Leu
            100                 105                 110


Glu Thr Thr Ala Asp Leu Glu Asp Ala Val Ala Ala Met Ala Arg His
        115                 120                 125


Leu Thr Ala Asp Gly Val Leu Ala Val Glu Pro Trp Tyr Phe Pro Asp
    130                 135                 140


Thr Phe Leu Asp Gly His Val Ser Thr His Ala Leu Arg Thr Ala Pro
145                 150                 155                 160


Gly Asp Gln Gly Val Ala Arg Val Ser His Ser Thr Arg Glu Gly Gly
```

```
                165                 170                 175


Arg Thr Arg Met Glu Ile His Tyr Leu Ile Ala His Thr Ala Glu Gly
            180                 185                 190


Ile Arg His Arg Ser Glu Val Asp Tyr Leu Thr Leu Phe Ser Arg Ala
        195                 200                 205


Glu Tyr Glu Ala Ala Tyr Arg Lys Ala Gly Leu Asp Val Glu Tyr Val
    210                 215                 220


Val Thr Gly Glu Gly Ser Pro Gly Phe Phe Leu Gly Thr Arg Arg
225                 230                 235


<210>  47
<211>  1968
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1968)

<400>  47
atg agt gac ctg ggt tct ggt gaa gaa ggg tcc gaa gaa gac gag tcg        48
Met Ser Asp Leu Gly Ser Gly Glu Glu Gly Ser Glu Glu Asp Glu Ser
1               5                   10                  15

gac gac gca ctc gcc ttc ctc gag ttc atc gcc cgg tcg gca cca cgg        96
Asp Asp Ala Leu Ala Phe Leu Glu Phe Ile Ala Arg Ser Ala Pro Arg
            20                  25                  30

agc gaa tac gac cgg ctc atg gcc cgc gcc gaa cgc tcg ggc gcc gac       144
Ser Glu Tyr Asp Arg Leu Met Ala Arg Ala Glu Arg Ser Gly Ala Asp
        35                  40                  45

gag gac cgg atg cgc cga ctg gag cgc ttc aac cgg ctc gcc ctc acc       192
Glu Asp Arg Met Arg Arg Leu Glu Arg Phe Asn Arg Leu Ala Leu Thr
    50                  55                  60

gcg cag tcg atg atc gag tac cgc cgc gac cgg gag gcg gag ctc gcg       240
Ala Gln Ser Met Ile Glu Tyr Arg Arg Asp Arg Glu Ala Glu Leu Ala
65                  70                  75                  80

gcc ctg gtc gac gcc gcg cac gag ttc gtc gcc gcc cgg cgg ggc aag       288
Ala Leu Val Asp Ala Ala His Glu Phe Val Ala Ala Arg Arg Gly Lys
                85                  90                  95

gac ctg ctg gag tcc atc gcc cgc aga gca cgg ctg ctg ctg aag ctg       336
Asp Leu Leu Glu Ser Ile Ala Arg Arg Ala Arg Leu Leu Leu Lys Leu
            100                 105                 110

gac gtc tcc tac gtc ggc ctg cac gag gag gac cgg ccc ggc acg gtg       384
Asp Val Ser Tyr Val Gly Leu His Glu Glu Asp Arg Pro Gly Thr Val
        115                 120                 125

gtg ctg agc gcc gac ggc aac gcg gtc aag gtc gcc gag agc tac cgg       432
```

```
Val Leu Ser Ala Asp Gly Asn Ala Val Lys Val Ala Glu Ser Tyr Arg
    130                 135                 140

ctg ccg gcc gac ggc gga ctg ggc gcc atg gtg cgc acc tgc cgc gct        480
Leu Pro Ala Asp Gly Gly Leu Gly Ala Met Val Arg Thr Cys Arg Ala
145                 150                 155                 160

ccc ttc tgg acc ccg gac tac ctc ggg gac aac agc ttc acg cac gtc        528
Pro Phe Trp Thr Pro Asp Tyr Leu Gly Asp Asn Ser Phe Thr His Val
                165                 170                 175

gag gcc gtc gac gac atc gtc cgc gcc gaa ggc ctg cgc gcg gtc ctg        576
Glu Ala Val Asp Asp Ile Val Arg Ala Glu Gly Leu Arg Ala Val Leu
            180                 185                 190

gcc gtc ccg ctg tgc gcc ggg ggc gaa ccg atg ggg gtc ctc tac gtc        624
Ala Val Pro Leu Cys Ala Gly Gly Glu Pro Met Gly Val Leu Tyr Val
        195                 200                 205

gcc gac cgt cag gtg cgg cat ctg acc ccc aac gag gtc acc ctg ctg        672
Ala Asp Arg Gln Val Arg His Leu Thr Pro Asn Glu Val Thr Leu Leu
    210                 215                 220

tgc tcg ctc gcc gat ctg gcc gcg gtg gcg atc gag cgc aac cgg ctg        720
Cys Ser Leu Ala Asp Leu Ala Ala Val Ala Ile Glu Arg Asn Arg Leu
225                 230                 235                 240

gtc gag gag ctc cac gac acc atc ggg caa ctg cgc cag gac atc ggc        768
Val Glu Glu Leu His Asp Thr Ile Gly Gln Leu Arg Gln Asp Ile Gly
                245                 250                 255

gag gcc cgc acc gcc ctc gcg cgc acc cgc agg tcc gcc gac ctc cag        816
Glu Ala Arg Thr Ala Leu Ala Arg Thr Arg Arg Ser Ala Asp Leu Gln
            260                 265                 270

tcg cac ctg gtc acg cag gtg atg gac agg cgc ggc gcc gac tcg tta        864
Ser His Leu Val Thr Gln Val Met Asp Arg Arg Gly Ala Asp Ser Leu
        275                 280                 285

ctc gcg acg gcc gcc gag gcg ctc ggc ggc gga gcc ggc ctg tgc agc        912
Leu Ala Thr Ala Ala Glu Ala Leu Gly Gly Gly Ala Gly Leu Cys Ser
    290                 295                 300

ccg ctc ggg cgc ccg ctc gcc gag tac ggg acc ctg cgc ccc gtc gcc        960
Pro Leu Gly Arg Pro Leu Ala Glu Tyr Gly Thr Leu Arg Pro Val Ala
305                 310                 315                 320

ccc acg gaa ctg cgc gcg gcg tgc cgc cgg gcc gcc gag acc ggc cgg       1008
Pro Thr Glu Leu Arg Ala Ala Cys Arg Arg Ala Ala Glu Thr Gly Arg
                325                 330                 335

ccc acc tcc gtg gcc ccg ggg gtc tgg acg gtg ccc ctg ctt ccc ggg       1056
Pro Thr Ser Val Ala Pro Gly Val Trp Thr Val Pro Leu Leu Pro Gly
            340                 345                 350

ggc aac gcc ggc ttc ctg ctg acc gac ctc ggt ccg gac gcg gac cac       1104
Gly Asn Ala Gly Phe Leu Leu Thr Asp Leu Gly Pro Asp Ala Asp His
        355                 360                 365

acc gcc gtc ccc ctg ctc ccg atg gtc gcc cgc acc ctc gcg ctg cac       1152
Thr Ala Val Pro Leu Leu Pro Met Val Ala Arg Thr Leu Ala Leu His
    370                 375                 380
```

```
ctg cgc gtc cag cac gac gac tcc ccc aag gcg cag agc cac cag gag       1200
Leu Arg Val Gln His Asp Asp Ser Pro Lys Ala Gln Ser His Gln Glu
385                 390                 395                 400

ttc ttc gac gac ctg atc ggg gcg ccc cgc tca ccc acg ctc ctc agg       1248
Phe Phe Asp Asp Leu Ile Gly Ala Pro Arg Ser Pro Thr Leu Leu Arg
                405                 410                 415

gaa cgc gcc ctg atg ttc tcc ctc agc ttc cgc cgc ccg cac gtg gtg       1296
Glu Arg Ala Leu Met Phe Ser Leu Ser Phe Arg Arg Pro His Val Val
            420                 425                 430

ctg gtg gcg gac gga ccc cgc ggg acc tcg ccg cgg ctg gag gcc tcc       1344
Leu Val Ala Asp Gly Pro Arg Gly Thr Ser Pro Arg Leu Glu Ala Ser
        435                 440                 445

ggc gcc gac tac gcg aag gag ctc ggc ggg ctg tgc agc gtg cgg gac       1392
Gly Ala Asp Tyr Ala Lys Glu Leu Gly Gly Leu Cys Ser Val Arg Asp
    450                 455                 460

ggc gcc gtc gtc ctg ctg ctg ccc ggc gac gac ccc gtc gcc gtg gcg       1440
Gly Ala Val Val Leu Leu Leu Pro Gly Asp Asp Pro Val Ala Val Ala
465                 470                 475                 480

cag acc gcc gcc ccg gag ctg acc gac cgc gcc ggg cac ccc gtc acc       1488
Gln Thr Ala Ala Pro Glu Leu Thr Asp Arg Ala Gly His Pro Val Thr
                485                 490                 495

gtg ggg gtc gcg ggc ccc gcc tcg acc gtc gac ggc atc gcc gac gcg       1536
Val Gly Val Ala Gly Pro Ala Ser Thr Val Asp Gly Ile Ala Asp Ala
            500                 505                 510

cac cgt gag gcc gcg aag tgt ctg gag acc ctc cgc gcg ctc ggc ggc       1584
His Arg Glu Ala Ala Lys Cys Leu Glu Thr Leu Arg Ala Leu Gly Gly
        515                 520                 525

gac ggc ggc acc gcg tgc gcc tcc gac ctg ggt ttc ctc ggc atg ctc       1632
Asp Gly Gly Thr Ala Cys Ala Ser Asp Leu Gly Phe Leu Gly Met Leu
    530                 535                 540

ctc gcc gag gag aac gac gtc ccc ggt tac atc agg acg acg atc ggc       1680
Leu Ala Glu Glu Asn Asp Val Pro Gly Tyr Ile Arg Thr Thr Ile Gly
545                 550                 555                 560

ccc gtg gtc gac tac gac acc cac cgc ttc acg gat ctg gtt ccc act       1728
Pro Val Val Asp Tyr Asp Thr His Arg Phe Thr Asp Leu Val Pro Thr
                565                 570                 575

ctg agg gtg tac ctg gag tcg ggc agg agc ccc acg cgt gcc gca gag       1776
Leu Arg Val Tyr Leu Glu Ser Gly Arg Ser Pro Thr Arg Ala Ala Glu
            580                 585                 590

aca ctg cgc gtg cac ccg aac acc gtc tca cgg cgg ctg gag cgc atc       1824
Thr Leu Arg Val His Pro Asn Thr Val Ser Arg Arg Leu Glu Arg Ile
        595                 600                 605

ggc gta ctg ctg gga gag gac tgg cag tca ccg gag cgg gtg ctg gac       1872
Gly Val Leu Leu Gly Glu Asp Trp Gln Ser Pro Glu Arg Val Leu Asp
    610                 615                 620

ata caa ctg gcc ctg cgg ctc tat cag gtg cgc tcg gcg ctc tcc tcg       1920
Ile Gln Leu Ala Leu Arg Leu Tyr Gln Val Arg Ser Ala Leu Ser Ser
625                 630                 635                 640
```

```
caa ccg gcg tcc gag acc cgg gcc gtg ctc gga tcg ctg cgc gag tga      1968
Gln Pro Ala Ser Glu Thr Arg Ala Val Leu Gly Ser Leu Arg Glu
                645                 650                 655


<210>  48
<211>  655
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  48

Met Ser Asp Leu Gly Ser Gly Glu Glu Gly Ser Glu Glu Asp Glu Ser
1               5                   10                  15


Asp Asp Ala Leu Ala Phe Leu Glu Phe Ile Ala Arg Ser Ala Pro Arg
            20                  25                  30


Ser Glu Tyr Asp Arg Leu Met Ala Arg Ala Glu Arg Ser Gly Ala Asp
        35                  40                  45


Glu Asp Arg Met Arg Arg Leu Glu Arg Phe Asn Arg Leu Ala Leu Thr
    50                  55                  60


Ala Gln Ser Met Ile Glu Tyr Arg Arg Asp Arg Glu Ala Glu Leu Ala
65                  70                  75                  80


Ala Leu Val Asp Ala Ala His Glu Phe Val Ala Ala Arg Arg Gly Lys
                85                  90                  95


Asp Leu Leu Glu Ser Ile Ala Arg Arg Ala Arg Leu Leu Leu Lys Leu
            100                 105                 110


Asp Val Ser Tyr Val Gly Leu His Glu Glu Asp Arg Pro Gly Thr Val
        115                 120                 125


Val Leu Ser Ala Asp Gly Asn Ala Val Lys Val Ala Glu Ser Tyr Arg
    130                 135                 140


Leu Pro Ala Asp Gly Gly Leu Gly Ala Met Val Arg Thr Cys Arg Ala
145                 150                 155                 160


Pro Phe Trp Thr Pro Asp Tyr Leu Gly Asp Asn Ser Phe Thr His Val
                165                 170                 175


Glu Ala Val Asp Asp Ile Val Arg Ala Glu Gly Leu Arg Ala Val Leu
            180                 185                 190


Ala Val Pro Leu Cys Ala Gly Gly Glu Pro Met Gly Val Leu Tyr Val
        195                 200                 205
```

```
Ala Asp Arg Gln Val Arg His Leu Thr Pro Asn Glu Val Thr Leu Leu
    210                 215                 220

Cys Ser Leu Ala Asp Leu Ala Ala Val Ala Ile Glu Arg Asn Arg Leu
225                 230                 235                 240

Val Glu Glu Leu His Asp Thr Ile Gly Gln Leu Arg Gln Asp Ile Gly
                245                 250                 255

Glu Ala Arg Thr Ala Leu Ala Arg Thr Arg Arg Ser Ala Asp Leu Gln
            260                 265                 270

Ser His Leu Val Thr Gln Val Met Asp Arg Arg Gly Ala Asp Ser Leu
        275                 280                 285

Leu Ala Thr Ala Ala Glu Ala Leu Gly Gly Gly Ala Gly Leu Cys Ser
    290                 295                 300

Pro Leu Gly Arg Pro Leu Ala Glu Tyr Gly Thr Leu Arg Pro Val Ala
305                 310                 315                 320

Pro Thr Glu Leu Arg Ala Ala Cys Arg Arg Ala Ala Glu Thr Gly Arg
                325                 330                 335

Pro Thr Ser Val Ala Pro Gly Val Trp Thr Val Pro Leu Leu Pro Gly
            340                 345                 350

Gly Asn Ala Gly Phe Leu Leu Thr Asp Leu Gly Pro Asp Ala Asp His
        355                 360                 365

Thr Ala Val Pro Leu Leu Pro Met Val Ala Arg Thr Leu Ala Leu His
    370                 375                 380

Leu Arg Val Gln His Asp Asp Ser Pro Lys Ala Gln Ser His Gln Glu
385                 390                 395                 400

Phe Phe Asp Asp Leu Ile Gly Ala Pro Arg Ser Pro Thr Leu Leu Arg
                405                 410                 415

Glu Arg Ala Leu Met Phe Ser Leu Ser Phe Arg Arg Pro His Val Val
            420                 425                 430

Leu Val Ala Asp Gly Pro Arg Gly Thr Ser Pro Arg Leu Glu Ala Ser
        435                 440                 445

Gly Ala Asp Tyr Ala Lys Glu Leu Gly Gly Leu Cys Ser Val Arg Asp
```

```
    450                 455                 460


Gly Ala Val Val Leu Leu Leu Pro Gly Asp Asp Pro Val Ala Val Ala
465                 470                 475                 480


Gln Thr Ala Ala Pro Glu Leu Thr Asp Arg Ala Gly His Pro Val Thr
                485                 490                 495


Val Gly Val Ala Gly Pro Ala Ser Thr Val Asp Gly Ile Ala Asp Ala
            500                 505                 510


His Arg Glu Ala Ala Lys Cys Leu Glu Thr Leu Arg Ala Leu Gly Gly
        515                 520                 525


Asp Gly Gly Thr Ala Cys Ala Ser Asp Leu Gly Phe Leu Gly Met Leu
    530                 535                 540


Leu Ala Glu Glu Asn Asp Val Pro Gly Tyr Ile Arg Thr Thr Ile Gly
545                 550                 555                 560


Pro Val Val Asp Tyr Asp Thr His Arg Phe Thr Asp Leu Val Pro Thr
                565                 570                 575


Leu Arg Val Tyr Leu Glu Ser Gly Arg Ser Pro Thr Arg Ala Ala Glu
            580                 585                 590


Thr Leu Arg Val His Pro Asn Thr Val Ser Arg Arg Leu Glu Arg Ile
        595                 600                 605


Gly Val Leu Leu Gly Glu Asp Trp Gln Ser Pro Glu Arg Val Leu Asp
    610                 615                 620


Ile Gln Leu Ala Leu Arg Leu Tyr Gln Val Arg Ser Ala Leu Ser Ser
625                 630                 635                 640


Gln Pro Ala Ser Glu Thr Arg Ala Val Leu Gly Ser Leu Arg Glu
                645                 650                 655


<210>  49
<211>  1749
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1749)

<220>
<221>  CDS2
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<222>  (76)..(1749)

<220>
<221>  CDS3
<222>  (97)..(1749)

<400>  49
atg tcc gca gtg gtg gcg tcc ctt ctg ctt tcc gtt ctt tct gcg agc          48
Met Ser Ala Val Val Ala Ser Leu Leu Leu Ser Val Leu Ser Ala Ser
1               5                   10                  15

gcg ctc acg cat cca ctc atc ctc atc gtg gaa aca gga gac tta cgc          96
Ala Leu Thr His Pro Leu Ile Leu Ile Val Glu Thr Gly Asp Leu Arg
            20                  25                  30

gtg tcg att gcg caa tac gcc cta cac gac atc acg aag cgc tac cac         144
Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
        35                  40                  45

gac tgt gtc gtg ctc gac cgg gtc ggt ttc agc atc aag ccg ggc gag         192
Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
    50                  55                  60

aag gtc ggc gtg atc ggc gac aac ggt tcc ggc aag tcc acg ctg ctc         240
Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
65                  70                  75                  80

aag atc ctc gcc ggc cgc gtg gag ccc gac aac ggc gcg ctc acc gtg         288
Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
                85                  90                  95

gtc gct ccc ggc ggc gtc ggc tac ctg gcg cag aca ctg gaa ctg ccc         336
Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
            100                 105                 110

ctc gac gcc acc gtc cag gac gcc gtc gac ctg gcc ctg tcc gac ctg         384
Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
        115                 120                 125

cgc gag ctc gaa gcg gcg atg cgc gag gcc gag gcg gag ctg ggc gag         432
Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
    130                 135                 140

agc gac gag aac ggc tcc gag cgc gag ctg tcc gcc ggc ctc cag cgc         480
Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
145                 150                 155                 160

tac gcc gct ctg gtc gag cag tac cag gcg cgt ggc ggc tac gag gcc         528
Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
                165                 170                 175

gac gtg cgc gtg gag gtc gcg ctg cac ggc ctc gga ctg ccg agc ctg         576
Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
            180                 185                 190

gac cgc gac cgc aag ctc gga acc ctc tcc ggt ggc gaa cgc tcc cgc         624
Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
        195                 200                 205

ctc gcg ctc gcc gcg acc ctc gcc tcg tcg ccg gag ctg ctg ctc ctg         672
Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
    210                 215                 220
```

```
gac gaa ccg acc aac gac ctc gac gac cgg gcg atg gaa tgg ctg gag          720
Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
225                 230                 235                 240

gac cac ctg gcc ggc cac cgc ggc acg gtg atc gcg gtc acc cac gac          768
Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
                245                 250                 255

cgg gtc ttc ctc gac cgg ctc acc acc acg atc ctg gag gtc gac tcc          816
Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
            260                 265                 270

ggc agc gtc acc cgc tac ggc aac ggc tac gag ggc tac ctg acg gcc          864
Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
        275                 280                 285

aag gcc gtg gaa cgc gag cgg cgg ctg cgg gag tac gag gag tgg cgt          912
Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
    290                 295                 300

gcc gaa ctc gac cgc aac cgc ggg ctg atc acc tcc aac gtg gcg cgg          960
Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
305                 310                 315                 320

atg gac ggc atc ccg cgc aag atg tcc ctc tcc gtg ttc ggc cac ggc         1008
Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
                325                 330                 335

gcc tac cgc agg cga ggg cgc gac cac ggc gcg atg gtg cgg atc cgc         1056
Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
            340                 345                 350

aac gcg aag caa cgc gtg gcg cag ctg acc gag aac ccg gtc cac gct         1104
Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
        355                 360                 365

ccc gcc gac ccg ttg tcc ttc gcc gcc cgc atc gac acc gcg ggc ccg         1152
Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
    370                 375                 380

gag gcg gag gag gcg gtg gcc gaa ctc acc gac gtg cgc gtc gcg ggt         1200
Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
385                 390                 395                 400

cgg ctc gcc gtg gac tcc ctg acg atc cgg ccc ggc gaa cgg ctg ctc         1248
Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
                405                 410                 415

gtc aca ggt ccc aac ggt gcg ggc aag tcc acc ttg ttg cgg gtg ctg         1296
Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
            420                 425                 430

tcc ggg gaa ctg gag ccg gac ggc ggc tcg gtg cgc gtc ggc tgc cgg         1344
Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
        435                 440                 445

gtc ggt cat ctg cgg cag gac gag acg ccc tgg gcg ccc gga ctg acc         1392
Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
    450                 455                 460

gtg ctg cgg gcc ttc gcc cag ggc cgg gag ggc tac ctg gag gac cac         1440
Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
465                 470                 475                 480
```

```
gcg gag aaa ctg ctg tcg ctc ggc ctg ttc agc ccg tcc gac ctg cgg           1488
Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
                485                 490                 495

cga cgc gtg aag gat ctg tcc tac ggg cag cgc cgc cgg atc gag atc           1536
Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
            500                 505                 510

gcc cgg ctg gtg agc gac ccg atg gac ctg ctg ctg ctg gac gag ccc           1584
Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
        515                 520                 525

acc aac cac ctc acc ccg gtg ctg gtg gag gag ttg gag cag gca ctc           1632
Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
    530                 535                 540

gcg gac tac cgc ggc gcc gtc gtg gtc gtc acc cac gac cgt cgg atg           1680
Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
545                 550                 555                 560

cgg tcc cgg ttc acc ggc gcc cgg ctg acc atg gga gac ggg cgc atc           1728
Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
                565                 570                 575

gcc gag ttc agc gcc ggc tga                                               1749
Ala Glu Phe Ser Ala Gly
            580


<210>  50
<211>  582
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  50

Met Ser Ala Val Val Ala Ser Leu Leu Leu Ser Val Leu Ser Ala Ser
1               5                   10                  15


Ala Leu Thr His Pro Leu Ile Leu Ile Val Glu Thr Gly Asp Leu Arg
            20                  25                  30


Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
        35                  40                  45


Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
    50                  55                  60


Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
65                  70                  75                  80


Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
                85                  90                  95


Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
            100                 105                 110
```

```
Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
        115                 120                 125

Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
    130                 135                 140

Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
145                 150                 155                 160

Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
                165                 170                 175

Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
            180                 185                 190

Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
        195                 200                 205

Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
    210                 215                 220

Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
225                 230                 235                 240

Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
                245                 250                 255

Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
            260                 265                 270

Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
        275                 280                 285

Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
    290                 295                 300

Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
305                 310                 315                 320

Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
                325                 330                 335

Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
            340                 345                 350

Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
```

```
        355                 360                 365

Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
    370                 375                 380

Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
385                 390                 395                 400

Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
                405                 410                 415

Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
            420                 425                 430

Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
        435                 440                 445

Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
    450                 455                 460

Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
465                 470                 475                 480

Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
                485                 490                 495

Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
            500                 505                 510

Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
        515                 520                 525

Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
    530                 535                 540

Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
545                 550                 555                 560

Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
                565                 570                 575

Ala Glu Phe Ser Ala Gly
            580

<210>  51
<211>  557
<212>  PRT
<213>  Streptomyces ambofaciens
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<400>  51

Val Glu Thr Gly Asp Leu Arg Val Ser Ile Ala Gln Tyr Ala Leu His
1               5                   10                  15


Asp Ile Thr Lys Arg Tyr His Asp Cys Val Val Leu Asp Arg Val Gly
            20                  25                  30


Phe Ser Ile Lys Pro Gly Glu Lys Val Gly Val Ile Gly Asp Asn Gly
        35                  40                  45


Ser Gly Lys Ser Thr Leu Leu Lys Ile Leu Ala Gly Arg Val Glu Pro
    50                  55                  60


Asp Asn Gly Ala Leu Thr Val Val Ala Pro Gly Gly Val Gly Tyr Leu
65                  70                  75                  80


Ala Gln Thr Leu Glu Leu Pro Leu Asp Ala Thr Val Gln Asp Ala Val
                85                  90                  95


Asp Leu Ala Leu Ser Asp Leu Arg Glu Leu Glu Ala Ala Met Arg Glu
            100                 105                 110


Ala Glu Ala Glu Leu Gly Glu Ser Asp Glu Asn Gly Ser Glu Arg Glu
        115                 120                 125


Leu Ser Ala Gly Leu Gln Arg Tyr Ala Ala Leu Val Glu Gln Tyr Gln
    130                 135                 140


Ala Arg Gly Gly Tyr Glu Ala Asp Val Arg Val Glu Val Ala Leu His
145                 150                 155                 160


Gly Leu Gly Leu Pro Ser Leu Asp Arg Asp Arg Lys Leu Gly Thr Leu
                165                 170                 175


Ser Gly Gly Glu Arg Ser Arg Leu Ala Leu Ala Ala Thr Leu Ala Ser
            180                 185                 190


Ser Pro Glu Leu Leu Leu Leu Asp Glu Pro Thr Asn Asp Leu Asp Asp
        195                 200                 205


Arg Ala Met Glu Trp Leu Glu Asp His Leu Ala Gly His Arg Gly Thr
    210                 215                 220


Val Ile Ala Val Thr His Asp Arg Val Phe Leu Asp Arg Leu Thr Thr
225                 230                 235                 240
```

```
Thr Ile Leu Glu Val Asp Ser Gly Ser Val Thr Arg Tyr Gly Asn Gly
                245                 250                 255

Tyr Glu Gly Tyr Leu Thr Ala Lys Ala Val Glu Arg Glu Arg Arg Leu
            260                 265                 270

Arg Glu Tyr Glu Glu Trp Arg Ala Glu Leu Asp Arg Asn Arg Gly Leu
        275                 280                 285

Ile Thr Ser Asn Val Ala Arg Met Asp Gly Ile Pro Arg Lys Met Ser
    290                 295                 300

Leu Ser Val Phe Gly His Gly Ala Tyr Arg Arg Arg Gly Arg Asp His
305                 310                 315                 320

Gly Ala Met Val Arg Ile Arg Asn Ala Lys Gln Arg Val Ala Gln Leu
                325                 330                 335

Thr Glu Asn Pro Val His Ala Pro Ala Asp Pro Leu Ser Phe Ala Ala
            340                 345                 350

Arg Ile Asp Thr Ala Gly Pro Glu Ala Glu Glu Ala Val Ala Glu Leu
        355                 360                 365

Thr Asp Val Arg Val Ala Gly Arg Leu Ala Val Asp Ser Leu Thr Ile
    370                 375                 380

Arg Pro Gly Glu Arg Leu Leu Val Thr Gly Pro Asn Gly Ala Gly Lys
385                 390                 395                 400

Ser Thr Leu Leu Arg Val Leu Ser Gly Glu Leu Glu Pro Asp Gly Gly
                405                 410                 415

Ser Val Arg Val Gly Cys Arg Val Gly His Leu Arg Gln Asp Glu Thr
            420                 425                 430

Pro Trp Ala Pro Gly Leu Thr Val Leu Arg Ala Phe Ala Gln Gly Arg
        435                 440                 445

Glu Gly Tyr Leu Glu Asp His Ala Glu Lys Leu Leu Ser Leu Gly Leu
    450                 455                 460

Phe Ser Pro Ser Asp Leu Arg Arg Arg Val Lys Asp Leu Ser Tyr Gly
465                 470                 475                 480

Gln Arg Arg Arg Ile Glu Ile Ala Arg Leu Val Ser Asp Pro Met Asp
                485                 490                 495
```

```
Leu Leu Leu Leu Asp Glu Pro Thr Asn His Leu Thr Pro Val Leu Val
            500                 505                 510


Glu Glu Leu Glu Gln Ala Leu Ala Asp Tyr Arg Gly Ala Val Val Val
        515                 520                 525


Val Thr His Asp Arg Arg Met Arg Ser Arg Phe Thr Gly Ala Arg Leu
    530                 535                 540


Thr Met Gly Asp Gly Arg Ile Ala Glu Phe Ser Ala Gly
545                 550                 555


<210>  52
<211>  550
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  52

Val Ser Ile Ala Gln Tyr Ala Leu His Asp Ile Thr Lys Arg Tyr His
1               5                   10                  15


Asp Cys Val Val Leu Asp Arg Val Gly Phe Ser Ile Lys Pro Gly Glu
            20                  25                  30


Lys Val Gly Val Ile Gly Asp Asn Gly Ser Gly Lys Ser Thr Leu Leu
        35                  40                  45


Lys Ile Leu Ala Gly Arg Val Glu Pro Asp Asn Gly Ala Leu Thr Val
    50                  55                  60


Val Ala Pro Gly Gly Val Gly Tyr Leu Ala Gln Thr Leu Glu Leu Pro
65                  70                  75                  80


Leu Asp Ala Thr Val Gln Asp Ala Val Asp Leu Ala Leu Ser Asp Leu
                85                  90                  95


Arg Glu Leu Glu Ala Ala Met Arg Glu Ala Glu Ala Glu Leu Gly Glu
            100                 105                 110


Ser Asp Glu Asn Gly Ser Glu Arg Glu Leu Ser Ala Gly Leu Gln Arg
        115                 120                 125


Tyr Ala Ala Leu Val Glu Gln Tyr Gln Ala Arg Gly Gly Tyr Glu Ala
    130                 135                 140


Asp Val Arg Val Glu Val Ala Leu His Gly Leu Gly Leu Pro Ser Leu
145                 150                 155                 160
```

```
Asp Arg Asp Arg Lys Leu Gly Thr Leu Ser Gly Gly Glu Arg Ser Arg
                165                 170                 175

Leu Ala Leu Ala Ala Thr Leu Ala Ser Ser Pro Glu Leu Leu Leu Leu
            180                 185                 190

Asp Glu Pro Thr Asn Asp Leu Asp Asp Arg Ala Met Glu Trp Leu Glu
        195                 200                 205

Asp His Leu Ala Gly His Arg Gly Thr Val Ile Ala Val Thr His Asp
    210                 215                 220

Arg Val Phe Leu Asp Arg Leu Thr Thr Thr Ile Leu Glu Val Asp Ser
225                 230                 235                 240

Gly Ser Val Thr Arg Tyr Gly Asn Gly Tyr Glu Gly Tyr Leu Thr Ala
                245                 250                 255

Lys Ala Val Glu Arg Glu Arg Arg Leu Arg Glu Tyr Glu Glu Trp Arg
            260                 265                 270

Ala Glu Leu Asp Arg Asn Arg Gly Leu Ile Thr Ser Asn Val Ala Arg
        275                 280                 285

Met Asp Gly Ile Pro Arg Lys Met Ser Leu Ser Val Phe Gly His Gly
    290                 295                 300

Ala Tyr Arg Arg Arg Gly Arg Asp His Gly Ala Met Val Arg Ile Arg
305                 310                 315                 320

Asn Ala Lys Gln Arg Val Ala Gln Leu Thr Glu Asn Pro Val His Ala
                325                 330                 335

Pro Ala Asp Pro Leu Ser Phe Ala Ala Arg Ile Asp Thr Ala Gly Pro
            340                 345                 350

Glu Ala Glu Glu Ala Val Ala Glu Leu Thr Asp Val Arg Val Ala Gly
        355                 360                 365

Arg Leu Ala Val Asp Ser Leu Thr Ile Arg Pro Gly Glu Arg Leu Leu
    370                 375                 380

Val Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Arg Val Leu
385                 390                 395                 400

Ser Gly Glu Leu Glu Pro Asp Gly Gly Ser Val Arg Val Gly Cys Arg
                405                 410                 415
```

```
Val Gly His Leu Arg Gln Asp Glu Thr Pro Trp Ala Pro Gly Leu Thr
            420                 425                 430

Val Leu Arg Ala Phe Ala Gln Gly Arg Glu Gly Tyr Leu Glu Asp His
        435                 440                 445

Ala Glu Lys Leu Leu Ser Leu Gly Leu Phe Ser Pro Ser Asp Leu Arg
    450                 455                 460

Arg Arg Val Lys Asp Leu Ser Tyr Gly Gln Arg Arg Arg Ile Glu Ile
465                 470                 475                 480

Ala Arg Leu Val Ser Asp Pro Met Asp Leu Leu Leu Leu Asp Glu Pro
                485                 490                 495

Thr Asn His Leu Thr Pro Val Leu Val Glu Glu Leu Glu Gln Ala Leu
            500                 505                 510

Ala Asp Tyr Arg Gly Ala Val Val Val Val Thr His Asp Arg Arg Met
        515                 520                 525

Arg Ser Arg Phe Thr Gly Ala Arg Leu Thr Met Gly Asp Gly Arg Ile
    530                 535                 540

Ala Glu Phe Ser Ala Gly
545                 550


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<213>  Streptomyces ambofaciens


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<400>  53
gtg ccg cgc aac ggt atg cgt gtc gca ccg gcc gac gtg atg cag tcg          48
Val Pro Arg Asn Gly Met Arg Val Ala Pro Ala Asp Val Met Gln Ser
1               5                   10                  15

gac cgg gat gat cgc ttg tcc ggc ggc cgg atg cct agc ctc ggg agc          96
Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser
            20                  25                  30

aac cac agc ggt ctt tca cga gag ggg tcg acc atg ggc gat ctc agg         144
Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg
        35                  40                  45

aac cgc atc acc gag ctg gtc cgc gcg tac cac cgg gaa cag gcg ccc         192
Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro
    50                  55                  60

ggg ggc ttc gtt ccc ggg acg acg cac gta ccg gtc tcc ggc gcg gtg         240
Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser Gly Ala Val
65                  70                  75                  80

ctg agc gag gag gac cgg ctg gcg ctg gtg gag acg gcg ctg gag atg         288
Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met
                85                  90                  95

cgg atc gcg gcc ggc ccg gcc tcc cgg ggc ttc gag cgg cag ttc gcc         336
Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala
            100                 105                 110

cgg tac ctc ggg ctc cgg aag gcg cac ctg acc aac tcc ggt tcc tcc         384
Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser
        115                 120                 125

gcc aac ctc ctc gcc ctc ggc gcg ctc acc tcg ccg cag ctg gag gag         432
Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu
    130                 135                 140

aga cgg ctg cgt ccg ggg gac gag gtc gtc acg gtc gcc gcc ggg ttc         480
Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe
145                 150                 155                 160

ccc acg acg gtc aac ccg atc ttc cac aac ggg ctg gtg ccc gtc ttc         528
Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val Pro Val Phe
                165                 170                 175

gtg gac gtc gag ctc ggc acg tac aac acg acg ccc gag cgc atc gag         576
Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu
            180                 185                 190

cgg gcc atc ggc ccc cgg acc agg gcg atc atg atc gcg cac gcc ctg         624
Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu
        195                 200                 205

ggc aac ccc ttc gag gcc gaa gag gtg gcc cgc ctc gcg gac gag cgg         672
Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg
    210                 215                 220

gag ctg ttc ctc atc gag gac aac tgc gac gcg gtg ggg tcc cgc tac         720
```

```
Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr
225                 230                 235                 240

cgg ggc agg ctc acc ggc tcc ttc ggc gac ctg tcg acc gtc agc ttc          768
Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe
                245                 250                 255

tat ccc gcg cac cac atc gcg atg ggt gag ggg ggc tgc gtg ctc acc          816
Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr
            260                 265                 270

gac aac ctg gcc ctg gcg cgg atc gtg gaa tca ctg cgc gac tgg ggg          864
Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly
        275                 280                 285

cgc gac tgc tgg tgc gag ccg ggt gag gac aac cgc tgc ctc aag cgg          912
Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg
    290                 295                 300

ttc gac cag aag atg ggt gac ctg ccg ccc ggg tac gac cac aag tac          960
Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr
305                 310                 315                 320

atc ttc tcg cac gtc ggt tac aac ctg aag tcg acc gac ctg cag gcg         1008
Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala
                325                 330                 335

gcc ctc ggg ctg tcc cag ctg acc cgg atc gag gag ttc acc gag gcc         1056
Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala
            340                 345                 350

agg cgc gcc aac tgg cgg cat ctg cgc gcc gcg ttg gac ggg ctg ccc         1104
Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro
        355                 360                 365

ggt ctg ctg ctg cct cat gcc aca ccg ggc agc gat ccg agc tgg ttc         1152
Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe
    370                 375                 380

ggg ttc ctc atc acc gtg gac ccg gac gcc gcg tac agc agg gcg gcc         1200
Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala
385                 390                 395                 400

ctg gtc gac cac ctg gaa tcg cgc cgg atc agc acc cgc cgc ctg ttc         1248
Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe
                405                 410                 415

ggg ggc aac ctc gtg cgg cac ccc gcc tac acc gac cgt cgg tac cgg         1296
Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg
            420                 425                 430

gtg tcc ggc tcc ctg gag aac agc gac ctg atc acc gac cag acg ttc         1344
Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe
        435                 440                 445

tgg atc ggg gtc ttc ccc ggc atc acc ccg gag atg atc gcc tac gtc         1392
Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val
    450                 455                 460

ggc gac acg atc cgg gag ttc gtg ctc aag cac tcc tga                     1431
Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
465                 470                 475
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<210>  54
<211>  476
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  54

Val Pro Arg Asn Gly Met Arg Val Ala Pro Ala Asp Val Met Gln Ser
1               5                   10                  15


Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser
            20                  25                  30


Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg
        35                  40                  45


Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro
    50                  55                  60


Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser Gly Ala Val
65                  70                  75                  80


Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met
                85                  90                  95


Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala
            100                 105                 110


Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser
        115                 120                 125


Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu
    130                 135                 140


Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe
145                 150                 155                 160


Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val Pro Val Phe
                165                 170                 175


Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu
            180                 185                 190


Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu
        195                 200                 205


Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg
    210                 215                 220
```

```
Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr
225                 230                 235                 240

Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe
                245                 250                 255

Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr
            260                 265                 270

Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly
        275                 280                 285

Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg
    290                 295                 300

Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr
305                 310                 315                 320

Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala
                325                 330                 335

Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala
            340                 345                 350

Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro
        355                 360                 365

Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe
    370                 375                 380

Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala
385                 390                 395                 400

Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe
                405                 410                 415

Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg
            420                 425                 430

Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe
        435                 440                 445

Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val
    450                 455                 460

Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
465                 470                 475
```

```
<210>  55
<211>  471
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  55

Met Arg Val Ala Pro Ala Asp Val Met Gln Ser Asp Arg Asp Asp Arg
1               5                   10                  15


Leu Ser Gly Gly Arg Met Pro Ser Leu Gly Ser Asn His Ser Gly Leu
            20                  25                  30


Ser Arg Glu Gly Ser Thr Met Gly Asp Leu Arg Asn Arg Ile Thr Glu
        35                  40                  45


Leu Val Arg Ala Tyr His Arg Glu Gln Ala Pro Gly Gly Phe Val Pro
    50                  55                  60


Gly Thr Thr His Val Pro Val Ser Gly Ala Val Leu Ser Glu Glu Asp
65                  70                  75                  80


Arg Leu Ala Leu Val Glu Thr Ala Leu Glu Met Arg Ile Ala Ala Gly
                85                  90                  95


Pro Ala Ser Arg Gly Phe Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu
            100                 105                 110


Arg Lys Ala His Leu Thr Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala
        115                 120                 125


Leu Gly Ala Leu Thr Ser Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro
    130                 135                 140


Gly Asp Glu Val Val Thr Val Ala Ala Gly Phe Pro Thr Thr Val Asn
145                 150                 155                 160


Pro Ile Phe His Asn Gly Leu Val Pro Val Phe Val Asp Val Glu Leu
                165                 170                 175


Gly Thr Tyr Asn Thr Thr Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro
            180                 185                 190


Arg Thr Arg Ala Ile Met Ile Ala His Ala Leu Gly Asn Pro Phe Glu
        195                 200                 205


Ala Glu Glu Val Ala Arg Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile
    210                 215                 220
```

```
Glu Asp Asn Cys Asp Ala Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr
225                 230                 235                 240

Gly Ser Phe Gly Asp Leu Ser Thr Val Ser Phe Tyr Pro Ala His His
                245                 250                 255

Ile Ala Met Gly Glu Gly Gly Cys Val Leu Thr Asp Asn Leu Ala Leu
            260                 265                 270

Ala Arg Ile Val Glu Ser Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys
        275                 280                 285

Glu Pro Gly Glu Asp Asn Arg Cys Leu Lys Arg Phe Asp Gln Lys Met
    290                 295                 300

Gly Asp Leu Pro Pro Gly Tyr Asp His Lys Tyr Ile Phe Ser His Val
305                 310                 315                 320

Gly Tyr Asn Leu Lys Ser Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser
                325                 330                 335

Gln Leu Thr Arg Ile Glu Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp
            340                 345                 350

Arg His Leu Arg Ala Ala Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro
        355                 360                 365

His Ala Thr Pro Gly Ser Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr
    370                 375                 380

Val Asp Pro Asp Ala Ala Tyr Ser Arg Ala Ala Leu Val Asp His Leu
385                 390                 395                 400

Glu Ser Arg Arg Ile Ser Thr Arg Arg Leu Phe Gly Gly Asn Leu Val
                405                 410                 415

Arg His Pro Ala Tyr Thr Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu
            420                 425                 430

Glu Asn Ser Asp Leu Ile Thr Asp Gln Thr Phe Trp Ile Gly Val Phe
        435                 440                 445

Pro Gly Ile Thr Pro Glu Met Ile Ala Tyr Val Gly Asp Thr Ile Arg
    450                 455                 460

Glu Phe Val Leu Lys His Ser
```

```
465                 470


<210>  56
<211>  464
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  56

Val Met Gln Ser Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro
1               5                   10                  15


Ser Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met
            20                  25                  30


Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg
        35                  40                  45


Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val
    50                  55                  60


Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr
65                  70                  75                  80


Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu
                85                  90                  95


Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn
            100                 105                 110


Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro
        115                 120                 125


Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val
    130                 135                 140


Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu
145                 150                 155                 160


Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro
                165                 170                 175


Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile
            180                 185                 190


Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu
        195                 200                 205


Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val
```

```
    210                 215                 220

Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser
225                 230                 235                 240

Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly
                245                 250                 255

Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu
            260                 265                 270

Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg
        275                 280                 285

Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr
    290                 295                 300

Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr
305                 310                 315                 320

Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu
                325                 330                 335

Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu
            340                 345                 350

Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp
        355                 360                 365

Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr
    370                 375                 380

Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr
385                 390                 395                 400

Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp
                405                 410                 415

Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr
            420                 425                 430

Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met
        435                 440                 445

Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
    450                 455                 460
```

```
<210>  57
<211>  463
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  57

Met Gln Ser Asp Arg Asp Asp Arg Leu Ser Gly Gly Arg Met Pro Ser
1               5                   10                  15


Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser Thr Met Gly
            20                  25                  30


Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His Arg Glu
        35                  40                  45


Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro Val Ser
    50                  55                  60


Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu Thr Ala
65                  70                  75                  80


Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe Glu Arg
                85                  90                  95


Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr Asn Ser
            100                 105                 110


Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser Pro Gln
        115                 120                 125


Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr Val Ala
    130                 135                 140


Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly Leu Val
145                 150                 155                 160


Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr Pro Glu
                165                 170                 175


Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met Ile Ala
            180                 185                 190


His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg Leu Ala
        195                 200                 205


Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala Val Gly
    210                 215                 220
```

```
Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu Ser Thr
225                 230                 235                 240

Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly Gly Cys
                245                 250                 255

Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser Leu Arg
            260                 265                 270

Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn Arg Cys
        275                 280                 285

Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly Tyr Asp
    290                 295                 300

His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser Thr Asp
305                 310                 315                 320

Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu Glu Phe
                325                 330                 335

Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala Leu Asp
            340                 345                 350

Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser Asp Pro
        355                 360                 365

Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala Tyr Ser
    370                 375                 380

Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser Thr Arg
385                 390                 395                 400

Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr Asp Arg
                405                 410                 415

Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile Thr Asp
            420                 425                 430

Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu Met Ile
        435                 440                 445

Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His Ser
    450                 455                 460

<210>  58
<211>  450
<212>  PRT
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```
<213>  Streptomyces ambofaciens

<400>  58

Met Pro Ser Leu Gly Ser Asn His Ser Gly Leu Ser Arg Glu Gly Ser
1               5                   10                  15


Thr Met Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr
            20                  25                  30


His Arg Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val
        35                  40                  45


Pro Val Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val
    50                  55                  60


Glu Thr Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly
65                  70                  75                  80


Phe Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu
                85                  90                  95


Thr Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr
            100                 105                 110


Ser Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val
        115                 120                 125


Thr Val Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn
    130                 135                 140


Gly Leu Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr
145                 150                 155                 160


Thr Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile
                165                 170                 175


Met Ile Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala
            180                 185                 190


Arg Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp
        195                 200                 205


Ala Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp
    210                 215                 220


Leu Ser Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu
225                 230                 235                 240
```

```
Gly Gly Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu
                245                 250                 255

Ser Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp
            260                 265                 270

Asn Arg Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro
        275                 280                 285

Gly Tyr Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys
    290                 295                 300

Ser Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile
305                 310                 315                 320

Glu Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala
                325                 330                 335

Ala Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly
            340                 345                 350

Ser Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala
        355                 360                 365

Ala Tyr Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile
    370                 375                 380

Ser Thr Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr
385                 390                 395                 400

Thr Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu
                405                 410                 415

Ile Thr Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro
            420                 425                 430

Glu Met Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys
        435                 440                 445

His Ser
    450


<210>  59
<211>  433
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  59
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```
Met Gly Asp Leu Arg Asn Arg Ile Thr Glu Leu Val Arg Ala Tyr His
1               5                   10                  15


Arg Glu Gln Ala Pro Gly Gly Phe Val Pro Gly Thr Thr His Val Pro
            20                  25                  30


Val Ser Gly Ala Val Leu Ser Glu Glu Asp Arg Leu Ala Leu Val Glu
        35                  40                  45


Thr Ala Leu Glu Met Arg Ile Ala Ala Gly Pro Ala Ser Arg Gly Phe
    50                  55                  60


Glu Arg Gln Phe Ala Arg Tyr Leu Gly Leu Arg Lys Ala His Leu Thr
65                  70                  75                  80


Asn Ser Gly Ser Ser Ala Asn Leu Leu Ala Leu Gly Ala Leu Thr Ser
                85                  90                  95


Pro Gln Leu Glu Glu Arg Arg Leu Arg Pro Gly Asp Glu Val Val Thr
            100                 105                 110


Val Ala Ala Gly Phe Pro Thr Thr Val Asn Pro Ile Phe His Asn Gly
        115                 120                 125


Leu Val Pro Val Phe Val Asp Val Glu Leu Gly Thr Tyr Asn Thr Thr
    130                 135                 140


Pro Glu Arg Ile Glu Arg Ala Ile Gly Pro Arg Thr Arg Ala Ile Met
145                 150                 155                 160


Ile Ala His Ala Leu Gly Asn Pro Phe Glu Ala Glu Glu Val Ala Arg
                165                 170                 175


Leu Ala Asp Glu Arg Glu Leu Phe Leu Ile Glu Asp Asn Cys Asp Ala
            180                 185                 190


Val Gly Ser Arg Tyr Arg Gly Arg Leu Thr Gly Ser Phe Gly Asp Leu
        195                 200                 205


Ser Thr Val Ser Phe Tyr Pro Ala His His Ile Ala Met Gly Glu Gly
    210                 215                 220


Gly Cys Val Leu Thr Asp Asn Leu Ala Leu Ala Arg Ile Val Glu Ser
225                 230                 235                 240


Leu Arg Asp Trp Gly Arg Asp Cys Trp Cys Glu Pro Gly Glu Asp Asn
                245                 250                 255
```

```
Arg Cys Leu Lys Arg Phe Asp Gln Lys Met Gly Asp Leu Pro Pro Gly
            260                 265                 270


Tyr Asp His Lys Tyr Ile Phe Ser His Val Gly Tyr Asn Leu Lys Ser
        275                 280                 285


Thr Asp Leu Gln Ala Ala Leu Gly Leu Ser Gln Leu Thr Arg Ile Glu
    290                 295                 300


Glu Phe Thr Glu Ala Arg Arg Ala Asn Trp Arg His Leu Arg Ala Ala
305                 310                 315                 320


Leu Asp Gly Leu Pro Gly Leu Leu Leu Pro His Ala Thr Pro Gly Ser
                325                 330                 335


Asp Pro Ser Trp Phe Gly Phe Leu Ile Thr Val Asp Pro Asp Ala Ala
            340                 345                 350


Tyr Ser Arg Ala Ala Leu Val Asp His Leu Glu Ser Arg Arg Ile Ser
        355                 360                 365


Thr Arg Arg Leu Phe Gly Gly Asn Leu Val Arg His Pro Ala Tyr Thr
    370                 375                 380


Asp Arg Arg Tyr Arg Val Ser Gly Ser Leu Glu Asn Ser Asp Leu Ile
385                 390                 395                 400


Thr Asp Gln Thr Phe Trp Ile Gly Val Phe Pro Gly Ile Thr Pro Glu
                405                 410                 415


Met Ile Ala Tyr Val Gly Asp Thr Ile Arg Glu Phe Val Leu Lys His
            420                 425                 430


Ser


<210>  60
<211>  1398
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1398)

<400>  60
atg gac gac acg atg gcc ggc gcc gac gcc gag gaa tgg gac ggc gat       48
Met Asp Asp Thr Met Ala Gly Ala Asp Ala Glu Glu Trp Asp Gly Asp
```

```
1               5                   10                  15

cag tta gac cgc gag gac cgg gcc tcc ctc cgc cgc gtc gcg ggg ctc       96
Gln Leu Asp Arg Glu Asp Arg Ala Ser Leu Arg Arg Val Ala Gly Leu
            20                  25                  30

tcc acc gaa ctg acc gac gtc tcc gag gtc gag tac cgc cag ctg cga      144
Ser Thr Glu Leu Thr Asp Val Ser Glu Val Glu Tyr Arg Gln Leu Arg
        35                  40                  45

ctc gag cgg gtg gtg ctc gtc ggc atc tgg acc tcg gga acg gcc gcg      192
Leu Glu Arg Val Val Leu Val Gly Ile Trp Thr Ser Gly Thr Ala Ala
    50                  55                  60

gag gcc gac agt tcg ctc gcc gag ctg gcg gcg ctc gcc gag acc gcg      240
Glu Ala Asp Ser Ser Leu Ala Glu Leu Ala Ala Leu Ala Glu Thr Ala
65                  70                  75                  80

ggc gcc ctc gtg ctg gac ggc gtc gtg cag cgc cgg cag aag ccg gac      288
Gly Ala Leu Val Leu Asp Gly Val Val Gln Arg Arg Gln Lys Pro Asp
                85                  90                  95

ccg gcg acg tac atc ggc tcg ggc aag gcg tcg cag ctg cgc gac atc      336
Pro Ala Thr Tyr Ile Gly Ser Gly Lys Ala Ser Gln Leu Arg Asp Ile
            100                 105                 110

gtc gag gag acc ggc gcc gac acc gtg gtg tgc gac ggg gaa ctg agc      384
Val Glu Glu Thr Gly Ala Asp Thr Val Val Cys Asp Gly Glu Leu Ser
        115                 120                 125

ccc agt cag ctg atg cac ctg gag gag gtc gtc ggg gtc aag gtc gtg      432
Pro Ser Gln Leu Met His Leu Glu Glu Val Val Gly Val Lys Val Val
    130                 135                 140

gac cgc acg gcc ctg atc ctg gac atc ttc gcg cag cac gcc cag tcc      480
Asp Arg Thr Ala Leu Ile Leu Asp Ile Phe Ala Gln His Ala Gln Ser
145                 150                 155                 160

cgg gag ggc aag gcg cag gtg gcg ctg gcg cag atg cag tac atg ctg      528
Arg Glu Gly Lys Ala Gln Val Ala Leu Ala Gln Met Gln Tyr Met Leu
                165                 170                 175

ccg cgg ctg cgc ggc tgg ggc cag tcg ctg tcc cgg cag atg ggc ggc      576
Pro Arg Leu Arg Gly Trp Gly Gln Ser Leu Ser Arg Gln Met Gly Gly
            180                 185                 190

ggt ggc ggc ggt ggc atg gcc acg cgc ggt ccc ggt gag acg aag atc      624
Gly Gly Gly Gly Gly Met Ala Thr Arg Gly Pro Gly Glu Thr Lys Ile
        195                 200                 205

gag acg gac cgg cgg cgg atc aac gac aag atg gcc agg ctc cgc cgg      672
Glu Thr Asp Arg Arg Arg Ile Asn Asp Lys Met Ala Arg Leu Arg Arg
    210                 215                 220

gag ctg gag cag ctg aag acc ggc cgg gac gtg aac cgg gag gag cga      720
Glu Leu Glu Gln Leu Lys Thr Gly Arg Asp Val Asn Arg Glu Glu Arg
225                 230                 235                 240

cgg cgc aac aag gtg ctg tcg gtc gcc ctc gcc ggc tac acc aac gcc      768
Arg Arg Asn Lys Val Leu Ser Val Ala Leu Ala Gly Tyr Thr Asn Ala
                245                 250                 255

ggc aag tca tcg ctg ctc aac cgc ctc acc gga gcc ggc gtg ctg gtg      816
```

```
Gly Lys Ser Ser Leu Leu Asn Arg Leu Thr Gly Ala Gly Val Leu Val
            260                 265                 270

gag aac gcc ctg ttc gcc acc ctg gac acg acc gtg cgg cgg gcg acg      864
Glu Asn Ala Leu Phe Ala Thr Leu Asp Thr Thr Val Arg Arg Ala Thr
        275                 280                 285

acg ccg agc ggg cgc ccc tac acc atc gcc gac acc gtg ggc ttc gta      912
Thr Pro Ser Gly Arg Pro Tyr Thr Ile Ala Asp Thr Val Gly Phe Val
    290                 295                 300

cgc cac ctc ccg cac cac ctg gtg gag gcg ttc cgt tcc acg atc gaa      960
Arg His Leu Pro His His Leu Val Glu Ala Phe Arg Ser Thr Ile Glu
305                 310                 315                 320

gag gtc gcg gac gcg cat ctg gtg ctg cac gtg gtc gac ggt tcg cac     1008
Glu Val Ala Asp Ala His Leu Val Leu His Val Val Asp Gly Ser His
                325                 330                 335

ccg gac ccc ggc gcg cag ctg gcc tcg gtg cgc gag gtg ctg cgg gac     1056
Pro Asp Pro Gly Ala Gln Leu Ala Ser Val Arg Glu Val Leu Arg Asp
            340                 345                 350

gtg ggc gcc ggc gag tcc acc gag gtc gtg gtc gtc aac aag gcc gat     1104
Val Gly Ala Gly Glu Ser Thr Glu Val Val Val Val Asn Lys Ala Asp
        355                 360                 365

gtc gcg gac ccg gac gtc ctc gcc cgt ctg ctg gag cag gag ccg gac     1152
Val Ala Asp Pro Asp Val Leu Ala Arg Leu Leu Glu Gln Glu Pro Asp
    370                 375                 380

gcg atc gtc gtg tcc gcc cgt tcg ggt cgg ggc atc gac gag ctg cgg     1200
Ala Ile Val Val Ser Ala Arg Ser Gly Arg Gly Ile Asp Glu Leu Arg
385                 390                 395                 400

gaa ctg atc gac cgc ctg ctg ccg cac ccc gag gtg gag gtg gag gtc     1248
Glu Leu Ile Asp Arg Leu Leu Pro His Pro Glu Val Glu Val Glu Val
                405                 410                 415

gtg atc ccc tac gac gag ggg agc ctg gtg gcg cgg gtg cac gac gag     1296
Val Ile Pro Tyr Asp Glu Gly Ser Leu Val Ala Arg Val His Asp Glu
            420                 425                 430

ggc gag gtg ctc agc acc gag cac acg ccg gag ggc acc ctg ctc acc     1344
Gly Glu Val Leu Ser Thr Glu His Thr Pro Glu Gly Thr Leu Leu Thr
        435                 440                 445

gcg cgg gtc cac ccc gac ctc gcc tcg gag ctt cgg acg ctt ccg cgg     1392
Ala Arg Val His Pro Asp Leu Ala Ser Glu Leu Arg Thr Leu Pro Arg
    450                 455                 460

ccg tga                                                             1398
Pro
465


<210>  61
<211>  465
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  61
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Met Asp Asp Thr Met Ala Gly Ala Asp Ala Glu Glu Trp Asp Gly Asp
1               5                   10                  15

Gln Leu Asp Arg Glu Asp Arg Ala Ser Leu Arg Arg Val Ala Gly Leu
            20                  25                  30

Ser Thr Glu Leu Thr Asp Val Ser Glu Val Glu Tyr Arg Gln Leu Arg
        35                  40                  45

Leu Glu Arg Val Val Leu Val Gly Ile Trp Thr Ser Gly Thr Ala Ala
    50                  55                  60

Glu Ala Asp Ser Ser Leu Ala Glu Leu Ala Ala Leu Ala Glu Thr Ala
65                  70                  75                  80

Gly Ala Leu Val Leu Asp Gly Val Val Gln Arg Arg Gln Lys Pro Asp
                85                  90                  95

Pro Ala Thr Tyr Ile Gly Ser Gly Lys Ala Ser Gln Leu Arg Asp Ile
            100                 105                 110

Val Glu Glu Thr Gly Ala Asp Thr Val Val Cys Asp Gly Glu Leu Ser
        115                 120                 125

Pro Ser Gln Leu Met His Leu Glu Glu Val Val Gly Val Lys Val Val
    130                 135                 140

Asp Arg Thr Ala Leu Ile Leu Asp Ile Phe Ala Gln His Ala Gln Ser
145                 150                 155                 160

Arg Glu Gly Lys Ala Gln Val Ala Leu Ala Gln Met Gln Tyr Met Leu
                165                 170                 175

Pro Arg Leu Arg Gly Trp Gly Gln Ser Leu Ser Arg Gln Met Gly Gly
            180                 185                 190

Gly Gly Gly Gly Gly Met Ala Thr Arg Gly Pro Gly Glu Thr Lys Ile
        195                 200                 205

Glu Thr Asp Arg Arg Arg Ile Asn Asp Lys Met Ala Arg Leu Arg Arg
    210                 215                 220

Glu Leu Glu Gln Leu Lys Thr Gly Arg Asp Val Asn Arg Glu Glu Arg
225                 230                 235                 240

Arg Arg Asn Lys Val Leu Ser Val Ala Leu Ala Gly Tyr Thr Asn Ala
                245                 250                 255
```

```
Gly Lys Ser Ser Leu Leu Asn Arg Leu Thr Gly Ala Gly Val Leu Val
            260                 265                 270

Glu Asn Ala Leu Phe Ala Thr Leu Asp Thr Thr Val Arg Arg Ala Thr
        275                 280                 285

Thr Pro Ser Gly Arg Pro Tyr Thr Ile Ala Asp Thr Val Gly Phe Val
    290                 295                 300

Arg His Leu Pro His His Leu Val Glu Ala Phe Arg Ser Thr Ile Glu
305                 310                 315                 320

Glu Val Ala Asp Ala His Leu Val Leu His Val Val Asp Gly Ser His
                325                 330                 335

Pro Asp Pro Gly Ala Gln Leu Ala Ser Val Arg Glu Val Leu Arg Asp
            340                 345                 350

Val Gly Ala Gly Glu Ser Thr Glu Val Val Val Val Asn Lys Ala Asp
        355                 360                 365

Val Ala Asp Pro Asp Val Leu Ala Arg Leu Leu Glu Gln Glu Pro Asp
    370                 375                 380

Ala Ile Val Val Ser Ala Arg Ser Gly Arg Gly Ile Asp Glu Leu Arg
385                 390                 395                 400

Glu Leu Ile Asp Arg Leu Leu Pro His Pro Glu Val Glu Val Glu Val
                405                 410                 415

Val Ile Pro Tyr Asp Glu Gly Ser Leu Val Ala Arg Val His Asp Glu
            420                 425                 430

Gly Glu Val Leu Ser Thr Glu His Thr Pro Glu Gly Thr Leu Leu Thr
        435                 440                 445

Ala Arg Val His Pro Asp Leu Ala Ser Glu Leu Arg Thr Leu Pro Arg
    450                 455                 460

Pro
465


<210>  62
<211>  1044
<212>  DNA
<213>  Streptomyces ambofaciens
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<220>
<221>  CDS
<222>  (1)..(1044)

<400>  62
atg cga gta ctc att atc ggg ggt tca cag ttc gtg ggc cgg gcc ttc         48
Met Arg Val Leu Ile Ile Gly Gly Ser Gln Phe Val Gly Arg Ala Phe
1               5                   10                  15

gcc gcc gag gca ctg gcc gcg ggg cac cgg gtc acc acg ttc aac cgg         96
Ala Ala Glu Ala Leu Ala Ala Gly His Arg Val Thr Thr Phe Asn Arg
            20                  25                  30

ggt gtc agc ggc acc gac ctg ccc ggc gtc gag gcg gtc agg ggc gac        144
Gly Val Ser Gly Thr Asp Leu Pro Gly Val Glu Ala Val Arg Gly Asp
        35                  40                  45

cgc gag gtg gcc ggc gac ctg gag cgg ctg gtg tcc gga agg cac tgg        192
Arg Glu Val Ala Gly Asp Leu Glu Arg Leu Val Ser Gly Arg His Trp
    50                  55                  60

gac gcg gtc gtg gac acc tgc ggt tac gtg ccc cgc acg gtg ggg gcc        240
Asp Ala Val Val Asp Thr Cys Gly Tyr Val Pro Arg Thr Val Gly Ala
65                  70                  75                  80

tcg gcc gcg gcg ctg tcc ggg cac gcg gac acc tac ctc tac gtc tcc        288
Ser Ala Ala Ala Leu Ser Gly His Ala Asp Thr Tyr Leu Tyr Val Ser
                85                  90                  95

agc atc gcc tgc ctg ccc gac tgg gcg cag gcg gtc cgt ccg gtg gac        336
Ser Ile Ala Cys Leu Pro Asp Trp Ala Gln Ala Val Arg Pro Val Asp
            100                 105                 110

gac gac tca cct gcc cac gac tgc ccg ccg gac gcc gga ccg gac cac        384
Asp Asp Ser Pro Ala His Asp Cys Pro Pro Asp Ala Gly Pro Asp His
        115                 120                 125

gcc gac ggt gac tac ggc gtc ctg aag gcc ggc tgc gag cgc gcc gtg        432
Ala Asp Gly Asp Tyr Gly Val Leu Lys Ala Gly Cys Glu Arg Ala Val
    130                 135                 140

gac cgg cac ttc gcg ggc cgg acc ctg cac ctg cgg gcc ggt gtc atc        480
Asp Arg His Phe Ala Gly Arg Thr Leu His Leu Arg Ala Gly Val Ile
145                 150                 155                 160

ctc ggg ccg cac gac acc atg cgc atg ctc gac gcc tgg ctg tgg cgc        528
Leu Gly Pro His Asp Thr Met Arg Met Leu Asp Ala Trp Leu Trp Arg
                165                 170                 175

atg cgc gtc gcc gag ggg gag cac cgc cgg gtg ctc gcc ccg ggc aac        576
Met Arg Val Ala Glu Gly Glu His Arg Arg Val Leu Ala Pro Gly Asn
            180                 185                 190

ccc gag gtg ggc atg cgc ctg atc gac gta cgc gat gtc gcc gtc ttc        624
Pro Glu Val Gly Met Arg Leu Ile Asp Val Arg Asp Val Ala Val Phe
        195                 200                 205

ggc ctc gac tgc ctc gcg gac ggc cgt acc ggc gcc ttc atc gtc aac        672
Gly Leu Asp Cys Leu Ala Asp Gly Arg Thr Gly Ala Phe Ile Val Asn
    210                 215                 220

ccg ccg gag aag aac acc acc ttc ggg gag ttg ctc acg gag tgc gtc        720
Pro Pro Glu Lys Asn Thr Thr Phe Gly Glu Leu Leu Thr Glu Cys Val
```

```
225                 230                 235                 240

aag gcc acc ggt tcg gcc gcg gag ccg gtg tgg gtc gac gag ggg ttc        768
Lys Ala Thr Gly Ser Ala Ala Glu Pro Val Trp Val Asp Glu Gly Phe
                245                 250                 255

ctc gcc gag cac ggc gtg agt ccg tgg acg gac ctg ccg atg tgg gtg        816
Leu Ala Glu His Gly Val Ser Pro Trp Thr Asp Leu Pro Met Trp Val
            260                 265                 270

ccc gac acc gcg cgg gac acc ctc gtg tgg gcg gcc gga gca ccg cgc        864
Pro Asp Thr Ala Arg Asp Thr Leu Val Trp Ala Ala Gly Ala Pro Arg
        275                 280                 285

gcc cgg gcc gcg ggt ctg gcc tgc cgg ccc ttc tcc gac acc gtg cgg        912
Ala Arg Ala Ala Gly Leu Ala Cys Arg Pro Phe Ser Asp Thr Val Arg
    290                 295                 300

gac gcc tgg gag gtc gtc cgg gac cgg ccc gtc ccg gaa ctg ccg ctc        960
Asp Ala Trp Glu Val Val Arg Asp Arg Pro Val Pro Glu Leu Pro Leu
305                 310                 315                 320

gcg gcc ggc tgc ggc ctg tcc ctg agc cgg gag aag gag ctg ctc gcc       1008
Ala Ala Gly Cys Gly Leu Ser Leu Ser Arg Glu Lys Glu Leu Leu Ala
                325                 330                 335

gcc tgg gac gct cgc ggc ggt gcg gcg gcg ggc tga                       1044
Ala Trp Asp Ala Arg Gly Gly Ala Ala Ala Gly
            340                 345


<210>  63
<211>  347
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  63

Met Arg Val Leu Ile Ile Gly Gly Ser Gln Phe Val Gly Arg Ala Phe
1               5                   10                  15


Ala Ala Glu Ala Leu Ala Ala Gly His Arg Val Thr Thr Phe Asn Arg
            20                  25                  30


Gly Val Ser Gly Thr Asp Leu Pro Gly Val Glu Ala Val Arg Gly Asp
        35                  40                  45


Arg Glu Val Ala Gly Asp Leu Glu Arg Leu Val Ser Gly Arg His Trp
    50                  55                  60


Asp Ala Val Val Asp Thr Cys Gly Tyr Val Pro Arg Thr Val Gly Ala
65                  70                  75                  80


Ser Ala Ala Ala Leu Ser Gly His Ala Asp Thr Tyr Leu Tyr Val Ser
                85                  90                  95


Ser Ile Ala Cys Leu Pro Asp Trp Ala Gln Ala Val Arg Pro Val Asp
```

```
            100                 105                 110

Asp Asp Ser Pro Ala His Asp Cys Pro Pro Asp Ala Gly Pro Asp His
        115                 120                 125

Ala Asp Gly Asp Tyr Gly Val Leu Lys Ala Gly Cys Glu Arg Ala Val
    130                 135                 140

Asp Arg His Phe Ala Gly Arg Thr Leu His Leu Arg Ala Gly Val Ile
145                 150                 155                 160

Leu Gly Pro His Asp Thr Met Arg Met Leu Asp Ala Trp Leu Trp Arg
                165                 170                 175

Met Arg Val Ala Glu Gly Glu His Arg Arg Val Leu Ala Pro Gly Asn
            180                 185                 190

Pro Glu Val Gly Met Arg Leu Ile Asp Val Arg Asp Val Ala Val Phe
        195                 200                 205

Gly Leu Asp Cys Leu Ala Asp Gly Arg Thr Gly Ala Phe Ile Val Asn
    210                 215                 220

Pro Pro Glu Lys Asn Thr Thr Phe Gly Glu Leu Leu Thr Glu Cys Val
225                 230                 235                 240

Lys Ala Thr Gly Ser Ala Ala Glu Pro Val Trp Val Asp Glu Gly Phe
                245                 250                 255

Leu Ala Glu His Gly Val Ser Pro Trp Thr Asp Leu Pro Met Trp Val
            260                 265                 270

Pro Asp Thr Ala Arg Asp Thr Leu Val Trp Ala Ala Gly Ala Pro Arg
        275                 280                 285

Ala Arg Ala Ala Gly Leu Ala Cys Arg Pro Phe Ser Asp Thr Val Arg
    290                 295                 300

Asp Ala Trp Glu Val Val Arg Asp Arg Pro Val Pro Glu Leu Pro Leu
305                 310                 315                 320

Ala Ala Gly Cys Gly Leu Ser Leu Ser Arg Glu Lys Glu Leu Leu Ala
                325                 330                 335

Ala Trp Asp Ala Arg Gly Gly Ala Ala Ala Gly
            340                 345
```

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<210>  64
<211>  1041
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1041)

<400>  64
atg acc gcc ctg ggt act tct gct gaa ccg ttc gcc gca ccc ggc ccg            48
Met Thr Ala Leu Gly Thr Ser Ala Glu Pro Phe Ala Ala Pro Gly Pro
1               5                   10                  15

ccg cgg ccg gaa gcg tcc ccg gtg ctg cgc ttc gga gcg atc ggc tgc            96
Pro Arg Pro Glu Ala Ser Pro Val Leu Arg Phe Gly Ala Ile Gly Cys
            20                  25                  30

ggc gac atc gcg ggc cgt cgc acc ctg ccc gcc ctg ctc tcc acc ccc           144
Gly Asp Ile Ala Gly Arg Arg Thr Leu Pro Ala Leu Leu Ser Thr Pro
        35                  40                  45

ggc acc gtg ctg acc tgc gtc ggc agc cgc gac gcg gac cgg gcc aag           192
Gly Thr Val Leu Thr Cys Val Gly Ser Arg Asp Ala Asp Arg Ala Lys
    50                  55                  60

gcc ctg ggc agg cac ttc gac tgc gag gcg gtc gcg ccc tac gag gcc           240
Ala Leu Gly Arg His Phe Asp Cys Glu Ala Val Ala Pro Tyr Glu Ala
65                  70                  75                  80

ctg ctg gaa cgc ccc gac gtg gac gcc gtc tac atc gcg gtg ccc agc           288
Leu Leu Glu Arg Pro Asp Val Asp Ala Val Tyr Ile Ala Val Pro Ser
                85                  90                  95

atg ctg cac gcc gaa tgg gcc gcg gcg gcg ctg cgg gcg ggc aaa cac           336
Met Leu His Ala Glu Trp Ala Ala Ala Ala Leu Arg Ala Gly Lys His
            100                 105                 110

gtc ctc gtg gag aag ccc gcc gcc gcc aac cac gcc gac gcg gcc cgc           384
Val Leu Val Glu Lys Pro Ala Ala Ala Asn His Ala Asp Ala Ala Arg
        115                 120                 125

ctg ttc gcc atg gcc cgg gag cgc gga ctg gta ctg atg gag aac ttc           432
Leu Phe Ala Met Ala Arg Glu Arg Gly Leu Val Leu Met Glu Asn Phe
    130                 135                 140

atg ttc ctc cac cac tct caa cac gcc acc gtc aaa gcc ctg ttg gag           480
Met Phe Leu His His Ser Gln His Ala Thr Val Lys Ala Leu Leu Glu
145                 150                 155                 160

gcc ggt gcc atc gga gag ctg cgc acc ttc tcc gcc gcc ttc acc atc           528
Ala Gly Ala Ile Gly Glu Leu Arg Thr Phe Ser Ala Ala Phe Thr Ile
                165                 170                 175

ccg ccg cgc gcc gac gac gac atg cgc tac cga ccc gac atc ggc ggc           576
Pro Pro Arg Ala Asp Asp Asp Met Arg Tyr Arg Pro Asp Ile Gly Gly
            180                 185                 190

ggc gca ctg ctc gac aac ggc gtc tac ccg ctg cgg gcc gcg ctg cac           624
Gly Ala Leu Leu Asp Asn Gly Val Tyr Pro Leu Arg Ala Ala Leu His
        195                 200                 205
```

```
ttc ctc gga ccc gaa ctg cgc ctg acc ggc gcc gtg ctg cgc cgt gac        672
Phe Leu Gly Pro Glu Leu Arg Leu Thr Gly Ala Val Leu Arg Arg Asp
    210                 215                 220

cgc cgc cgg ggc gtc gtg gtc tcc ggc agc gtc ctg ctc gcc gcc ccc        720
Arg Arg Arg Gly Val Val Val Ser Gly Ser Val Leu Leu Ala Ala Pro
225                 230                 235                 240

cag ggc gtg gcc gcc cac ctc gcc ttc ggc atg gaa cac ggc tac cgc        768
Gln Gly Val Ala Ala His Leu Ala Phe Gly Met Glu His Gly Tyr Arg
                245                 250                 255

tcg gcg tac gag ctg cac ggc agc acc ggc tcg ctc gcc ctg agc cac        816
Ser Ala Tyr Glu Leu His Gly Ser Thr Gly Ser Leu Ala Leu Ser His
            260                 265                 270

gtc ttc acg acc ccg gac agc cac cac ccc gta ctg cgg ctg tcc cgc        864
Val Phe Thr Thr Pro Asp Ser His His Pro Val Leu Arg Leu Ser Arg
        275                 280                 285

cag gac cac cgg gag gag cgc gtc ctg ccc gtg gac cgg cac ttc gtg        912
Gln Asp His Arg Glu Glu Arg Val Leu Pro Val Asp Arg His Phe Val
    290                 295                 300

aac atc ctg tcg gtc ttc cgc cgt gcg gtg atc cgg gcc gag gac gtc        960
Asn Ile Leu Ser Val Phe Arg Arg Ala Val Ile Arg Ala Glu Asp Val
305                 310                 315                 320

tcc gcc gag tcg tac gcc gcg ctg cgc cag gcg ggg ctg gtc gac gag       1008
Ser Ala Glu Ser Tyr Ala Ala Leu Arg Gln Ala Gly Leu Val Asp Glu
                325                 330                 335

atc gtg gcc cgc gcc gag acc ttc acc gtg tag                           1041
Ile Val Ala Arg Ala Glu Thr Phe Thr Val
            340                 345


<210>  65
<211>  346
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  65

Met Thr Ala Leu Gly Thr Ser Ala Glu Pro Phe Ala Ala Pro Gly Pro
1               5                   10                  15


Pro Arg Pro Glu Ala Ser Pro Val Leu Arg Phe Gly Ala Ile Gly Cys
            20                  25                  30


Gly Asp Ile Ala Gly Arg Arg Thr Leu Pro Ala Leu Leu Ser Thr Pro
        35                  40                  45


Gly Thr Val Leu Thr Cys Val Gly Ser Arg Asp Ala Asp Arg Ala Lys
    50                  55                  60


Ala Leu Gly Arg His Phe Asp Cys Glu Ala Val Ala Pro Tyr Glu Ala
65                  70                  75                  80
```

```
Leu Leu Glu Arg Pro Asp Val Asp Ala Val Tyr Ile Ala Val Pro Ser
                85                  90                  95

Met Leu His Ala Glu Trp Ala Ala Ala Ala Leu Arg Ala Gly Lys His
            100                 105                 110

Val Leu Val Glu Lys Pro Ala Ala Ala Asn His Ala Asp Ala Ala Arg
        115                 120                 125

Leu Phe Ala Met Ala Arg Glu Arg Gly Leu Val Leu Met Glu Asn Phe
    130                 135                 140

Met Phe Leu His His Ser Gln His Ala Thr Val Lys Ala Leu Leu Glu
145                 150                 155                 160

Ala Gly Ala Ile Gly Glu Leu Arg Thr Phe Ser Ala Ala Phe Thr Ile
                165                 170                 175

Pro Pro Arg Ala Asp Asp Asp Met Arg Tyr Arg Pro Asp Ile Gly Gly
            180                 185                 190

Gly Ala Leu Leu Asp Asn Gly Val Tyr Pro Leu Arg Ala Ala Leu His
        195                 200                 205

Phe Leu Gly Pro Glu Leu Arg Leu Thr Gly Ala Val Leu Arg Arg Asp
    210                 215                 220

Arg Arg Arg Gly Val Val Val Ser Gly Ser Val Leu Leu Ala Ala Pro
225                 230                 235                 240

Gln Gly Val Ala Ala His Leu Ala Phe Gly Met Glu His Gly Tyr Arg
                245                 250                 255

Ser Ala Tyr Glu Leu His Gly Ser Thr Gly Ser Leu Ala Leu Ser His
            260                 265                 270

Val Phe Thr Thr Pro Asp Ser His His Pro Val Leu Arg Leu Ser Arg
        275                 280                 285

Gln Asp His Arg Glu Glu Arg Val Leu Pro Val Asp Arg His Phe Val
    290                 295                 300

Asn Ile Leu Ser Val Phe Arg Arg Ala Val Ile Arg Ala Glu Asp Val
305                 310                 315                 320

Ser Ala Glu Ser Tyr Ala Ala Leu Arg Gln Ala Gly Leu Val Asp Glu
                325                 330                 335
```

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Ile Val Ala Arg Ala Glu Thr Phe Thr Val
            340                 345


<210>  66
<211>  1239
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1239)

<400>  66
gtg acg gac gcg atc acg acc gag ctg gcc gac cgc gaa ctg ggg cgc           48
Val Thr Asp Ala Ile Thr Thr Glu Leu Ala Asp Arg Glu Leu Gly Arg
1               5                   10                  15

aga ctg cac cgg ata cgc ggc gtc cac tgg tat ttc ggc aac cac ggt           96
Arg Leu His Arg Ile Arg Gly Val His Trp Tyr Phe Gly Asn His Gly
            20                  25                  30

gac ccg tac gcc ctc atc ctg cgc ggt cag acc gac gac ccg tcg gtg          144
Asp Pro Tyr Ala Leu Ile Leu Arg Gly Gln Thr Asp Asp Pro Ser Val
        35                  40                  45

tac gag gag cgg gtc cgc gag ggc ggg ccg ctg ttc cgc agc cgt acc          192
Tyr Glu Glu Arg Val Arg Glu Gly Gly Pro Leu Phe Arg Ser Arg Thr
    50                  55                  60

ggg acc tgg gtg acc gcg gac ccg gag gtg gcc gcg gcc gtg ctg ggc          240
Gly Thr Trp Val Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Gly
65                  70                  75                  80

gac tcg cgc ttc ggt gcg ctg gac cgc gcc gga cgg cgc ccg gag gag          288
Asp Ser Arg Phe Gly Ala Leu Asp Arg Ala Gly Arg Arg Pro Glu Glu
                85                  90                  95

tac ctc cag ccg tcg ccc gcc acg tac ctg ggg ctg gac cgc gcc gcg          336
Tyr Leu Gln Pro Ser Pro Ala Thr Tyr Leu Gly Leu Asp Arg Ala Ala
            100                 105                 110

tac gcg cgt ctg cgg cgg gtg gcc gag ccc gtg ctg ggc gcg gac gcc          384
Tyr Ala Arg Leu Arg Arg Val Ala Glu Pro Val Leu Gly Ala Asp Ala
        115                 120                 125

gcc gcc gcg tgg cgc cgg ctc ggc gag gac gtc ggg cgc cgg ctg ctc          432
Ala Ala Ala Trp Arg Arg Leu Gly Glu Asp Val Gly Arg Arg Leu Leu
    130                 135                 140

gcc ggc cgc ggt tcc ggc ctc gac ctg acg gcg gac ttc gcc cgc cgg          480
Ala Gly Arg Gly Ser Gly Leu Asp Leu Thr Ala Asp Phe Ala Arg Arg
145                 150                 155                 160

ctg ccg gca ttg gtc ctg gcc gcg tgg ctc ggg gtg ccg ggc gaa cgg          528
Leu Pro Ala Leu Val Leu Ala Ala Trp Leu Gly Val Pro Gly Glu Arg
                165                 170                 175

tgc gac gag tgg gag gag tcg ctg cgg gcg gcg ggg ccg ctg ctg gac          576
Cys Asp Glu Trp Glu Glu Ser Leu Arg Ala Ala Gly Pro Leu Leu Asp
```

```
            180                 185                 190

ggt ctg ctg tgt ccg cag acg ctg gcg gcc acc cgt gcg gcg gac tcg      624
Gly Leu Leu Cys Pro Gln Thr Leu Ala Ala Thr Arg Ala Ala Asp Ser
        195                 200                 205

gcc gcc gag ggg ctg cgc gcg ctg ttg gac gag gtg gtc gcc gcg cgt      672
Ala Ala Glu Gly Leu Arg Ala Leu Leu Asp Glu Val Val Ala Ala Arg
    210                 215                 220

ccc ggc ggg tcc ggc gag ggt gcg gtg gcc cgc atg gtc ggc gcc gga      720
Pro Gly Gly Ser Gly Glu Gly Ala Val Ala Arg Met Val Gly Ala Gly
225                 230                 235                 240

gcc gcc ccc gac gac gcg gtg gcc gcc gcc gtg tgc ctg gcg ctc tcg      768
Ala Ala Pro Asp Asp Ala Val Ala Ala Ala Val Cys Leu Ala Leu Ser
                245                 250                 255

gcc gtc gaa ccg acg acg acc ctg gtg tgc gaa gcg gtc cgg ctg ctg      816
Ala Val Glu Pro Thr Thr Thr Leu Val Cys Glu Ala Val Arg Leu Leu
            260                 265                 270

ctc gac cga ccc gag tgg tgg cgg cgg ttg tgc gac tcc ccc gct ctg      864
Leu Asp Arg Pro Glu Trp Trp Arg Arg Leu Cys Asp Ser Pro Ala Leu
        275                 280                 285

gcg ccg gcc gcg gtc cgg cac acc ctg cgg cac gcg ccc ccg gtg cgg      912
Ala Pro Ala Ala Val Arg His Thr Leu Arg His Ala Pro Pro Val Arg
    290                 295                 300

ctg gag agc cgg gtg gcc cac gag gac gtg acg gtg gcg gat cgt ccg      960
Leu Glu Ser Arg Val Ala His Glu Asp Val Thr Val Ala Asp Arg Pro
305                 310                 315                 320

ctg ccc gcc ggg agc cac gtg gtg gtg ctc gtg ggc gcg gca cgg cgc     1008
Leu Pro Ala Gly Ser His Val Val Val Leu Val Gly Ala Ala Arg Arg
                325                 330                 335

gcg ggc gcc ccg gcc gcg gag ccg gcg gac ctg gcg ggc gca ccg gcg     1056
Ala Gly Ala Pro Ala Ala Glu Pro Ala Asp Leu Ala Gly Ala Pro Ala
            340                 345                 350

gcg gag ctg ccg gac gac ctg tgg ttc gcg ctg tcc ggg gag ttc gtc     1104
Ala Glu Leu Pro Asp Asp Leu Trp Phe Ala Leu Ser Gly Glu Phe Val
        355                 360                 365

ggc cgt gcc gcc gag acc gcg ctg ggc gtg ctg gcc gag gcc gcc ccg     1152
Gly Arg Ala Ala Glu Thr Ala Leu Gly Val Leu Ala Glu Ala Ala Pro
    370                 375                 380

gga ctg cgg cgg gac ggc gac atc gtc cgg cgg cgc cgt tcc ccg gtc     1200
Gly Leu Arg Arg Asp Gly Asp Ile Val Arg Arg Arg Arg Ser Pro Val
385                 390                 395                 400

ctc ggc agg tac gcg cgg ttc ccc gtc gcg tac tcc tga                 1239
Leu Gly Arg Tyr Ala Arg Phe Pro Val Ala Tyr Ser
                405                 410


<210>  67
<211>  412
<212>  PRT
<213>  Streptomyces ambofaciens
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<400>  67

Val Thr Asp Ala Ile Thr Thr Glu Leu Ala Asp Arg Glu Leu Gly Arg
1               5                   10                  15


Arg Leu His Arg Ile Arg Gly Val His Trp Tyr Phe Gly Asn His Gly
            20                  25                  30


Asp Pro Tyr Ala Leu Ile Leu Arg Gly Gln Thr Asp Asp Pro Ser Val
        35                  40                  45


Tyr Glu Glu Arg Val Arg Glu Gly Gly Pro Leu Phe Arg Ser Arg Thr
    50                  55                  60


Gly Thr Trp Val Thr Ala Asp Pro Glu Val Ala Ala Ala Val Leu Gly
65                  70                  75                  80


Asp Ser Arg Phe Gly Ala Leu Asp Arg Ala Gly Arg Arg Pro Glu Glu
                85                  90                  95


Tyr Leu Gln Pro Ser Pro Ala Thr Tyr Leu Gly Leu Asp Arg Ala Ala
            100                 105                 110


Tyr Ala Arg Leu Arg Arg Val Ala Glu Pro Val Leu Gly Ala Asp Ala
        115                 120                 125


Ala Ala Ala Trp Arg Arg Leu Gly Glu Asp Val Gly Arg Arg Leu Leu
    130                 135                 140


Ala Gly Arg Gly Ser Gly Leu Asp Leu Thr Ala Asp Phe Ala Arg Arg
145                 150                 155                 160


Leu Pro Ala Leu Val Leu Ala Ala Trp Leu Gly Val Pro Gly Glu Arg
                165                 170                 175


Cys Asp Glu Trp Glu Glu Ser Leu Arg Ala Ala Gly Pro Leu Leu Asp
            180                 185                 190


Gly Leu Leu Cys Pro Gln Thr Leu Ala Ala Thr Arg Ala Ala Asp Ser
        195                 200                 205


Ala Ala Glu Gly Leu Arg Ala Leu Leu Asp Glu Val Val Ala Ala Arg
    210                 215                 220


Pro Gly Gly Ser Gly Glu Gly Ala Val Ala Arg Met Val Gly Ala Gly
225                 230                 235                 240
```

```
Ala Ala Pro Asp Asp Ala Val Ala Ala Ala Val Cys Leu Ala Leu Ser
                245                 250                 255


Ala Val Glu Pro Thr Thr Thr Leu Val Cys Glu Ala Val Arg Leu Leu
            260                 265                 270


Leu Asp Arg Pro Glu Trp Trp Arg Arg Leu Cys Asp Ser Pro Ala Leu
        275                 280                 285


Ala Pro Ala Ala Val Arg His Thr Leu Arg His Ala Pro Pro Val Arg
    290                 295                 300


Leu Glu Ser Arg Val Ala His Glu Asp Val Thr Val Ala Asp Arg Pro
305                 310                 315                 320


Leu Pro Ala Gly Ser His Val Val Val Leu Val Gly Ala Ala Arg Arg
                325                 330                 335


Ala Gly Ala Pro Ala Ala Glu Pro Ala Asp Leu Ala Gly Ala Pro Ala
            340                 345                 350


Ala Glu Leu Pro Asp Asp Leu Trp Phe Ala Leu Ser Gly Glu Phe Val
        355                 360                 365


Gly Arg Ala Ala Glu Thr Ala Leu Gly Val Leu Ala Glu Ala Ala Pro
    370                 375                 380


Gly Leu Arg Arg Asp Gly Asp Ile Val Arg Arg Arg Arg Ser Pro Val
385                 390                 395                 400


Leu Gly Arg Tyr Ala Arg Phe Pro Val Ala Tyr Ser
                405                 410


<210>  68
<211>  1272
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1272)

<400>  68
gtg cgc gtc ctg gtg acc tcc atc ccg cac cac acg cac tac tac cac        48
Val Arg Val Leu Val Thr Ser Ile Pro His His Thr His Tyr Tyr His
1               5                   10                  15

ctg gta ccg ctg atc tgg gct ctg cgt gcc tcg ggg cac gag gtg gtg        96
Leu Val Pro Leu Ile Trp Ala Leu Arg Ala Ser Gly His Glu Val Val
            20                  25                  30
```

```
gcg gcc ggc cag ccg tcg ctg gtc gac gcc atc acc gcc agc ggc atc          144
Ala Ala Gly Gln Pro Ser Leu Val Asp Ala Ile Thr Ala Ser Gly Ile
        35                  40                  45

ccg gcg ttc gcc ctg gcc gag gag gag tcg ctg gcg cag atc ttc gag          192
Pro Ala Phe Ala Leu Ala Glu Glu Glu Ser Leu Ala Gln Ile Phe Glu
    50                  55                  60

gag gtc gag ggc gat ctc cag ccg tat cag cac ggc atc gac gag ttc          240
Glu Val Glu Gly Asp Leu Gln Pro Tyr Gln His Gly Ile Asp Glu Phe
65                  70                  75                  80

gac ttc ttc ggc acc ctg aag gac gag ctg gac tgg gag aag ctg ctc          288
Asp Phe Phe Gly Thr Leu Lys Asp Glu Leu Asp Trp Glu Lys Leu Leu
                85                  90                  95

gcc cag cag gtg atc ctg tcc ggc ctg tgg ctg gaa ccg ctc aac ggc          336
Ala Gln Gln Val Ile Leu Ser Gly Leu Trp Leu Glu Pro Leu Asn Gly
            100                 105                 110

gcc acg acc ctc gac agc atc gtc gac ttc gcc cgg gcc tgg aag ccc          384
Ala Thr Thr Leu Asp Ser Ile Val Asp Phe Ala Arg Ala Trp Lys Pro
        115                 120                 125

gac ctg gtg ctg tgg gag ccg ttc acc tat gcg ggg ccg gtg gcg gcc          432
Asp Leu Val Leu Trp Glu Pro Phe Thr Tyr Ala Gly Pro Val Ala Ala
    130                 135                 140

cgg gcg tgc ggg gcc gcg cac gcc cgc gtc ctg tgg ggg ccg gac acg          480
Arg Ala Cys Gly Ala Ala His Ala Arg Val Leu Trp Gly Pro Asp Thr
145                 150                 155                 160

atc ggg ctg ctg cgg acg aag ttc ctt cag gcc cag gcg cgt cag ccc          528
Ile Gly Leu Leu Arg Thr Lys Phe Leu Gln Ala Gln Ala Arg Gln Pro
                165                 170                 175

gag gag cac cgg gac gac ccg gtc gcg gag tgg atg acc tgg gcc ctg          576
Glu Glu His Arg Asp Asp Pro Val Ala Glu Trp Met Thr Trp Ala Leu
            180                 185                 190

gcg cgc tac ggg tgc gac ttc cgg gag gag gac gtg ctc ggt cag tgg          624
Ala Arg Tyr Gly Cys Asp Phe Arg Glu Glu Asp Val Leu Gly Gln Trp
        195                 200                 205

agc gtg gac ccg atg gcg gag ggc gtc agt ctg ggc ctc gac ctg ccg          672
Ser Val Asp Pro Met Ala Glu Gly Val Ser Leu Gly Leu Asp Leu Pro
    210                 215                 220

acc gtc ccg atg cgc tac acc ccg tac aac ggg tcg gcg gtg atc ccc          720
Thr Val Pro Met Arg Tyr Thr Pro Tyr Asn Gly Ser Ala Val Ile Pro
225                 230                 235                 240

gac tgg ctg acc gag gaa ccg aaa cgg cct cgg gtc tgc ctg acc ctg          768
Asp Trp Leu Thr Glu Glu Pro Lys Arg Pro Arg Val Cys Leu Thr Leu
                245                 250                 255

ggg gtg tcc tcg cgg gag cac agt gag gac gag gtc ccg gtg cag agg          816
Gly Val Ser Ser Arg Glu His Ser Glu Asp Glu Val Pro Val Gln Arg
            260                 265                 270

ttt atc gag gcg ctg gcc gat ctc gac atc gag ctg gtg gcg acc ctg          864
Phe Ile Glu Ala Leu Ala Asp Leu Asp Ile Glu Leu Val Ala Thr Leu
        275                 280                 285
```

```
gac gac gcc cag cgg gac ctg ctg ccg agg atc ccg gac aac acg cgc      912
Asp Asp Ala Gln Arg Asp Leu Leu Pro Arg Ile Pro Asp Asn Thr Arg
    290                 295                 300

atc gtc gac ttc gtg ccc atg gac gcg ttg ctg ccg acg tgc tcg gcg      960
Ile Val Asp Phe Val Pro Met Asp Ala Leu Leu Pro Thr Cys Ser Ala
305                 310                 315                 320

atc atc aac cac agc ggt tcg ggc acg tgc aac acc gcc gcg ctg cac     1008
Ile Ile Asn His Ser Gly Ser Gly Thr Cys Asn Thr Ala Ala Leu His
                325                 330                 335

ggg gtg ccg cag atc atc ctc ggc ggc atc ctg gac gcc gcc gta cgg     1056
Gly Val Pro Gln Ile Ile Leu Gly Gly Ile Leu Asp Ala Ala Val Arg
            340                 345                 350

cag cac atg ttc gcg cag aac tcc gcc gcc ctc acc ttc gct ccg gag     1104
Gln His Met Phe Ala Gln Asn Ser Ala Ala Leu Thr Phe Ala Pro Glu
        355                 360                 365

gag gtg acc ggc gcg tcg ctg agg agc gcg ctg gtg cgc ctg ctc gag     1152
Glu Val Thr Gly Ala Ser Leu Arg Ser Ala Leu Val Arg Leu Leu Glu
    370                 375                 380

gag ccg cgg ttc cgc gac ggc gcg cgg cgg ctg aag gag cgg atg cgg     1200
Glu Pro Arg Phe Arg Asp Gly Ala Arg Arg Leu Lys Glu Arg Met Arg
385                 390                 395                 400

gcc atg ccc agc ccg gcc ggg atc gtg ccg acc ctg gag cgc ctc acg     1248
Ala Met Pro Ser Pro Ala Gly Ile Val Pro Thr Leu Glu Arg Leu Thr
                405                 410                 415

gcc cag cac cgc cgg gcg tgt tga                                     1272
Ala Gln His Arg Arg Ala Cys
            420


<210>  69
<211>  423
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  69

Val Arg Val Leu Val Thr Ser Ile Pro His His Thr His Tyr Tyr His
1               5                   10                  15


Leu Val Pro Leu Ile Trp Ala Leu Arg Ala Ser Gly His Glu Val Val
            20                  25                  30


Ala Ala Gly Gln Pro Ser Leu Val Asp Ala Ile Thr Ala Ser Gly Ile
        35                  40                  45


Pro Ala Phe Ala Leu Ala Glu Glu Glu Ser Leu Ala Gln Ile Phe Glu
    50                  55                  60


Glu Val Glu Gly Asp Leu Gln Pro Tyr Gln His Gly Ile Asp Glu Phe
65                  70                  75                  80
```

```
Asp Phe Phe Gly Thr Leu Lys Asp Glu Leu Asp Trp Glu Lys Leu Leu
                85                      90                  95

Ala Gln Gln Val Ile Leu Ser Gly Leu Trp Leu Glu Pro Leu Asn Gly
            100                 105                 110

Ala Thr Thr Leu Asp Ser Ile Val Asp Phe Ala Arg Ala Trp Lys Pro
        115                 120                 125

Asp Leu Val Leu Trp Glu Pro Phe Thr Tyr Ala Gly Pro Val Ala Ala
    130                 135                 140

Arg Ala Cys Gly Ala Ala His Ala Arg Val Leu Trp Gly Pro Asp Thr
145                 150                 155                 160

Ile Gly Leu Leu Arg Thr Lys Phe Leu Gln Ala Gln Ala Arg Gln Pro
                165                 170                 175

Glu Glu His Arg Asp Asp Pro Val Ala Glu Trp Met Thr Trp Ala Leu
            180                 185                 190

Ala Arg Tyr Gly Cys Asp Phe Arg Glu Glu Asp Val Leu Gly Gln Trp
        195                 200                 205

Ser Val Asp Pro Met Ala Glu Gly Val Ser Leu Gly Leu Asp Leu Pro
    210                 215                 220

Thr Val Pro Met Arg Tyr Thr Pro Tyr Asn Gly Ser Ala Val Ile Pro
225                 230                 235                 240

Asp Trp Leu Thr Glu Glu Pro Lys Arg Pro Arg Val Cys Leu Thr Leu
                245                 250                 255

Gly Val Ser Ser Arg Glu His Ser Glu Asp Glu Val Pro Val Gln Arg
            260                 265                 270

Phe Ile Glu Ala Leu Ala Asp Leu Asp Ile Glu Leu Val Ala Thr Leu
        275                 280                 285

Asp Asp Ala Gln Arg Asp Leu Leu Pro Arg Ile Pro Asp Asn Thr Arg
    290                 295                 300

Ile Val Asp Phe Val Pro Met Asp Ala Leu Leu Pro Thr Cys Ser Ala
305                 310                 315                 320

Ile Ile Asn His Ser Gly Ser Gly Thr Cys Asn Thr Ala Ala Leu His
```

```
                325                 330                 335


Gly Val Pro Gln Ile Ile Leu Gly Gly Ile Leu Asp Ala Ala Val Arg
            340                 345                 350


Gln His Met Phe Ala Gln Asn Ser Ala Ala Leu Thr Phe Ala Pro Glu
        355                 360                 365


Glu Val Thr Gly Ala Ser Leu Arg Ser Ala Leu Val Arg Leu Leu Glu
    370                 375                 380


Glu Pro Arg Phe Arg Asp Gly Ala Arg Arg Leu Lys Glu Arg Met Arg
385                 390                 395                 400


Ala Met Pro Ser Pro Ala Gly Ile Val Pro Thr Leu Glu Arg Leu Thr
                405                 410                 415


Ala Gln His Arg Arg Ala Cys
            420


<210>  70
<211>  1179
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1179)

<400>  70
atg cgg gcc ctc ttc acg acc gcg ccg ctc gcg ggc cac ctg ctt ccg       48
Met Arg Ala Leu Phe Thr Thr Ala Pro Leu Ala Gly His Leu Leu Pro
1               5                   10                  15

ctg gtg ccc atc gcg tgg gcc ctg cgg gcg gcc ggc cac gag gta ctg       96
Leu Val Pro Ile Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Leu
            20                  25                  30

gtg gcg acc cgg gag gac ttc gtg ccg gtc gcc ctg cgg tcg ggg ctg      144
Val Ala Thr Arg Glu Asp Phe Val Pro Val Ala Leu Arg Ser Gly Leu
        35                  40                  45

ccg tcc gcc tcg tgc ggg ccg ccc gcc gcg gac ctg gcg ggc gcg gcc      192
Pro Ser Ala Ser Cys Gly Pro Pro Ala Ala Asp Leu Ala Gly Ala Ala
    50                  55                  60

gag gcg ggg gcg ctc gcg cgg ccc cgc gga gcg gcg gag gct cgg ggg      240
Glu Ala Gly Ala Leu Ala Arg Pro Arg Gly Ala Ala Glu Ala Arg Gly
65                  70                  75                  80

gtc ctg agc ggg gcg ctg gcg cgc gtc gcc cgg ggc agt ctg gcg ggg      288
Val Leu Ser Gly Ala Leu Ala Arg Val Ala Arg Gly Ser Leu Ala Gly
                85                  90                  95

gtg cgg cgg ctg gcg gac gcc tgg cgg ccg gat ctg atc gtc agc gaa      336
```

```
Val Arg Arg Leu Ala Asp Ala Trp Arg Pro Asp Leu Ile Val Ser Glu
            100                 105                 110

cgg gcc gag ttc gcc ggg ccg ctg gtc gcg gcg gcc ctc ggg gtc ccg         384
Arg Ala Glu Phe Ala Gly Pro Leu Val Ala Ala Ala Leu Gly Val Pro
        115                 120                 125

tgg gtc cgc tac cac tgg tcg gtc tcg tcc ctg gag gag tac cgg cga         432
Trp Val Arg Tyr His Trp Ser Val Ser Ser Leu Glu Glu Tyr Arg Arg
    130                 135                 140

gcg gcc gag gcc gag ttc gcg ccc gag ctg gcg gcg ctc ggc ctc gac         480
Ala Ala Glu Ala Glu Phe Ala Pro Glu Leu Ala Ala Leu Gly Leu Asp
145                 150                 155                 160

cgg ttc ccg gag gcg gcg cgc gtg ctc gat ccg tgg ccg gtg tcg ctg         528
Arg Phe Pro Glu Ala Ala Arg Val Leu Asp Pro Trp Pro Val Ser Leu
                165                 170                 175

cgc cgg ccg gac gcg gtc gcc cac gac ggg gtc cgg cac gta ccg gcc         576
Arg Arg Pro Asp Ala Val Ala His Asp Gly Val Arg His Val Pro Ala
            180                 185                 190

cac ggg gac gcc ccc gtc ccc gac tgg gcg ttc acg cgc ggt cgc ggg         624
His Gly Asp Ala Pro Val Pro Asp Trp Ala Phe Thr Arg Gly Arg Gly
        195                 200                 205

ccg cgg atc tgc gtg acg ctc ggc acc atg ctg ccc cgg tac ggc gcc         672
Pro Arg Ile Cys Val Thr Leu Gly Thr Met Leu Pro Arg Tyr Gly Ala
    210                 215                 220

gcc ggg atg gcc gac ttc ctg acg gag ctg gtg gcg gag acc cgc gga         720
Ala Gly Met Ala Asp Phe Leu Thr Glu Leu Val Ala Glu Thr Arg Gly
225                 230                 235                 240

ggg gac tgc gaa ctg ctc gtg gcg gtc gac gac gac gtc gtc gcg cgg         768
Gly Asp Cys Glu Leu Leu Val Ala Val Asp Asp Asp Val Val Ala Arg
                245                 250                 255

tgg ccg tcg ctg ccc tcc gcg gtg cgg tac gcc ggc cgg ctg ccg ctg         816
Trp Pro Ser Leu Pro Ser Ala Val Arg Tyr Ala Gly Arg Leu Pro Leu
            260                 265                 270

gcg gag gtg ctg ccc gcg tgc gac gcg gtg gtg cac cac ggc ggg cag         864
Ala Glu Val Leu Pro Ala Cys Asp Ala Val Val His His Gly Gly Gln
        275                 280                 285

ggc acg tcc ctg acc gcg ctg gcc gcg ggt cgg ccg cag gtc gtc atg         912
Gly Thr Ser Leu Thr Ala Leu Ala Ala Gly Arg Pro Gln Val Val Met
    290                 295                 300

gcg cgg ctc gac gac cag ttc gac aac gcg cgg gca ctg gcg gcg gcg         960
Ala Arg Leu Asp Asp Gln Phe Asp Asn Ala Arg Ala Leu Ala Ala Ala
305                 310                 315                 320

ggg gcg gcc ctg ctc gta ccg ccg tcc cgg gcc act ccc gcg gcc gtg        1008
Gly Ala Ala Leu Leu Val Pro Pro Ser Arg Ala Thr Pro Ala Ala Val
                325                 330                 335

gcc gcg ggg tgc gcc gaa gtg ctg gag aac gcc ctg tat gcc aag gcg        1056
Ala Ala Gly Cys Ala Glu Val Leu Glu Asn Ala Leu Tyr Ala Lys Ala
            340                 345                 350
```

```
gca gcc ggg ctc gcc gag gag atg gcg ctg ctg ccg tcg ccg tcg gcg       1104
Ala Ala Gly Leu Ala Glu Glu Met Ala Leu Leu Pro Ser Pro Ser Ala
        355                 360                 365

gcg gtc gga ctc ctg gaa cac ccg ggg ccc ggg ccg gac atg ccg cgg       1152
Ala Val Gly Leu Leu Glu His Pro Gly Pro Gly Pro Asp Met Pro Arg
    370                 375                 380

agt tac ccg aac gag gat gcg gtg tga                                   1179
Ser Tyr Pro Asn Glu Asp Ala Val
385                 390


<210>  71
<211>  392
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  71

Met Arg Ala Leu Phe Thr Thr Ala Pro Leu Ala Gly His Leu Leu Pro
1               5                   10                  15


Leu Val Pro Ile Ala Trp Ala Leu Arg Ala Ala Gly His Glu Val Leu
            20                  25                  30


Val Ala Thr Arg Glu Asp Phe Val Pro Val Ala Leu Arg Ser Gly Leu
        35                  40                  45


Pro Ser Ala Ser Cys Gly Pro Pro Ala Ala Asp Leu Ala Gly Ala Ala
    50                  55                  60


Glu Ala Gly Ala Leu Ala Arg Pro Arg Gly Ala Ala Glu Ala Arg Gly
65                  70                  75                  80


Val Leu Ser Gly Ala Leu Ala Arg Val Ala Arg Gly Ser Leu Ala Gly
                85                  90                  95


Val Arg Arg Leu Ala Asp Ala Trp Arg Pro Asp Leu Ile Val Ser Glu
            100                 105                 110


Arg Ala Glu Phe Ala Gly Pro Leu Val Ala Ala Ala Leu Gly Val Pro
        115                 120                 125


Trp Val Arg Tyr His Trp Ser Val Ser Ser Leu Glu Glu Tyr Arg Arg
    130                 135                 140


Ala Ala Glu Ala Glu Phe Ala Pro Glu Leu Ala Ala Leu Gly Leu Asp
145                 150                 155                 160


Arg Phe Pro Glu Ala Ala Arg Val Leu Asp Pro Trp Pro Val Ser Leu
                165                 170                 175
```

```
Arg Arg Pro Asp Ala Val Ala His Asp Gly Val Arg His Val Pro Ala
            180                 185                 190

His Gly Asp Ala Pro Val Pro Asp Trp Ala Phe Thr Arg Gly Arg Gly
        195                 200                 205

Pro Arg Ile Cys Val Thr Leu Gly Thr Met Leu Pro Arg Tyr Gly Ala
    210                 215                 220

Ala Gly Met Ala Asp Phe Leu Thr Glu Leu Val Ala Glu Thr Arg Gly
225                 230                 235                 240

Gly Asp Cys Glu Leu Leu Val Ala Val Asp Asp Asp Val Val Ala Arg
                245                 250                 255

Trp Pro Ser Leu Pro Ser Ala Val Arg Tyr Ala Gly Arg Leu Pro Leu
            260                 265                 270

Ala Glu Val Leu Pro Ala Cys Asp Ala Val Val His His Gly Gly Gln
        275                 280                 285

Gly Thr Ser Leu Thr Ala Leu Ala Ala Gly Arg Pro Gln Val Val Met
    290                 295                 300

Ala Arg Leu Asp Asp Gln Phe Asp Asn Ala Arg Ala Leu Ala Ala Ala
305                 310                 315                 320

Gly Ala Ala Leu Leu Val Pro Pro Ser Arg Ala Thr Pro Ala Ala Val
                325                 330                 335

Ala Ala Gly Cys Ala Glu Val Leu Glu Asn Ala Leu Tyr Ala Lys Ala
            340                 345                 350

Ala Ala Gly Leu Ala Glu Glu Met Ala Leu Leu Pro Ser Pro Ser Ala
        355                 360                 365

Ala Val Gly Leu Leu Glu His Pro Gly Pro Gly Pro Asp Met Pro Arg
    370                 375                 380

Ser Tyr Pro Asn Glu Asp Ala Val
385                 390


<210>  72
<211>  993
<212>  DNA
<213>  Streptomyces ambofaciens
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<220>
<221>  CDS
<222>  (1)..(993)

<400>  72
gtg aat ctg gaa gta ctc aac cgt tcg aac gat ccg cgc ggg ccg gtg          48
Val Asn Leu Glu Val Leu Asn Arg Ser Asn Asp Pro Arg Gly Pro Val
1               5                   10                  15

atc acg gtg gtc ggc gcg tcc ggc ttc atc ggg tcc gcc ctg gtc gcc          96
Ile Thr Val Val Gly Ala Ser Gly Phe Ile Gly Ser Ala Leu Val Ala
            20                  25                  30

gag ctg gcg cgc atg ccg gtg cgg ctg cgg gcg gtg gcc cgg cgc gag         144
Glu Leu Ala Arg Met Pro Val Arg Leu Arg Ala Val Ala Arg Arg Glu
        35                  40                  45

acc ccc gtt ccc gcg ggg gca cgg gcc gcc gtc gag gtc cgc cgg gcg         192
Thr Pro Val Pro Ala Gly Ala Arg Ala Ala Val Glu Val Arg Arg Ala
    50                  55                  60

gac ctc gcc cgg ccg gac gag gtc ggg gcc gcc gtc gag ggg gcg gac         240
Asp Leu Ala Arg Pro Asp Glu Val Gly Ala Ala Val Glu Gly Ala Asp
65                  70                  75                  80

gcc gtc gtg cac ctc gcc gcc cac atc ggc ggc gcg cgg tcg tgg cgc         288
Ala Val Val His Leu Ala Ala His Ile Gly Gly Ala Arg Ser Trp Arg
                85                  90                  95

gcg gcc gac gag cgg tcg ctg cgg gtg aac gtc ggt ctg ctg cgc gac         336
Ala Ala Asp Glu Arg Ser Leu Arg Val Asn Val Gly Leu Leu Arg Asp
            100                 105                 110

gtg gcc gac gcg ttc cgg gac cgc tcg ggg ccc gcc ccg gcc gtg gtc         384
Val Ala Asp Ala Phe Arg Asp Arg Ser Gly Pro Ala Pro Ala Val Val
        115                 120                 125

ctg gcc agt acc ctc cag gcc ggc gtc gag ctg tcc cgg cag ggc ccg         432
Leu Ala Ser Thr Leu Gln Ala Gly Val Glu Leu Ser Arg Gln Gly Pro
    130                 135                 140

tac gcc cgg cag aag tcg gcg gcc gag gag gtc ctg ctg cgg gcc gcc         480
Tyr Ala Arg Gln Lys Ser Ala Ala Glu Glu Val Leu Leu Arg Ala Ala
145                 150                 155                 160

tcc gag gag gtg gtc cgc ggc gtc gtg ctg cgg ctg ccg acc gtc tac         528
Ser Glu Glu Val Val Arg Gly Val Val Leu Arg Leu Pro Thr Val Tyr
                165                 170                 175

ggg cgc agc ccg ctg acc ggg tgg acg ggc cgc ggg gtg gtc gcg tcg         576
Gly Arg Ser Pro Leu Thr Gly Trp Thr Gly Arg Gly Val Val Ala Ser
            180                 185                 190

gtg gca cgg cag gcc gtc tcg ggc gag ccg gtc acg atg tgg cac gac         624
Val Ala Arg Gln Ala Val Ser Gly Glu Pro Val Thr Met Trp His Asp
        195                 200                 205

ggc acg gtc ggg cgc gat ctg ctc cac gtg gag gac gcg gcc cgc gcc         672
Gly Thr Val Gly Arg Asp Leu Leu His Val Glu Asp Ala Ala Arg Ala
    210                 215                 220

ttc gcg gcg gcg ctc ggt cac gtg gag cgg ctg gac ggc ggc acg tgg         720
Phe Ala Ala Ala Leu Gly His Val Glu Arg Leu Asp Gly Gly Thr Trp
```

```
225                 230                 235                 240

tcc gtc ggt acg ggc cgg ctg gag ccc ttg gga gag gtg ttc tcg gcc        768
Ser Val Gly Thr Gly Arg Leu Glu Pro Leu Gly Glu Val Phe Ser Ala
                245                 250                 255

ctc gcc ggg ctg gtg gcc gag cgg acg ggg agg ccc ccc gta ccg gtg        816
Leu Ala Gly Leu Val Ala Glu Arg Thr Gly Arg Pro Pro Val Pro Val
            260                 265                 270

gtc tcc acg gag ccg ccc gac cat gcc gag gcg ggc gac ttc gag agc        864
Val Ser Thr Glu Pro Pro Asp His Ala Glu Ala Gly Asp Phe Glu Ser
        275                 280                 285

gcg gtc tgt gac ccc tcc gcg ttc cgc gcg gtg acc ggg tgg tct ccc        912
Ala Val Cys Asp Pro Ser Ala Phe Arg Ala Val Thr Gly Trp Ser Pro
    290                 295                 300

ctc gtt ccg ttg cgg gcg ggg ctc ggc gcc gtg gtg gag acg atg gtg        960
Leu Val Pro Leu Arg Ala Gly Leu Gly Ala Val Val Glu Thr Met Val
305                 310                 315                 320

gcc gac gga gcg agg ggt ggg atc cga acg tga                            993
Ala Asp Gly Ala Arg Gly Gly Ile Arg Thr
                325                 330


<210>  73
<211>  330
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  73

Val Asn Leu Glu Val Leu Asn Arg Ser Asn Asp Pro Arg Gly Pro Val
1               5                   10                  15


Ile Thr Val Val Gly Ala Ser Gly Phe Ile Gly Ser Ala Leu Val Ala
            20                  25                  30


Glu Leu Ala Arg Met Pro Val Arg Leu Arg Ala Val Ala Arg Arg Glu
        35                  40                  45


Thr Pro Val Pro Ala Gly Ala Arg Ala Ala Val Glu Val Arg Arg Ala
    50                  55                  60


Asp Leu Ala Arg Pro Asp Glu Val Gly Ala Ala Val Glu Gly Ala Asp
65                  70                  75                  80


Ala Val Val His Leu Ala Ala His Ile Gly Gly Ala Arg Ser Trp Arg
                85                  90                  95


Ala Ala Asp Glu Arg Ser Leu Arg Val Asn Val Gly Leu Leu Arg Asp
            100                 105                 110


Val Ala Asp Ala Phe Arg Asp Arg Ser Gly Pro Ala Pro Ala Val Val
```

```
    115                 120                 125

Leu Ala Ser Thr Leu Gln Ala Gly Val Glu Leu Ser Arg Gln Gly Pro
    130                 135                 140

Tyr Ala Arg Gln Lys Ser Ala Ala Glu Glu Val Leu Leu Arg Ala Ala
145                 150                 155                 160

Ser Glu Glu Val Val Arg Gly Val Val Leu Arg Leu Pro Thr Val Tyr
                165                 170                 175

Gly Arg Ser Pro Leu Thr Gly Trp Thr Gly Arg Gly Val Val Ala Ser
            180                 185                 190

Val Ala Arg Gln Ala Val Ser Gly Glu Pro Val Thr Met Trp His Asp
        195                 200                 205

Gly Thr Val Gly Arg Asp Leu Leu His Val Glu Asp Ala Ala Arg Ala
    210                 215                 220

Phe Ala Ala Ala Leu Gly His Val Glu Arg Leu Asp Gly Gly Thr Trp
225                 230                 235                 240

Ser Val Gly Thr Gly Arg Leu Glu Pro Leu Gly Glu Val Phe Ser Ala
                245                 250                 255

Leu Ala Gly Leu Val Ala Glu Arg Thr Gly Arg Pro Pro Val Pro Val
            260                 265                 270

Val Ser Thr Glu Pro Pro Asp His Ala Glu Ala Gly Asp Phe Glu Ser
        275                 280                 285

Ala Val Cys Asp Pro Ser Ala Phe Arg Ala Val Thr Gly Trp Ser Pro
    290                 295                 300

Leu Val Pro Leu Arg Ala Gly Leu Gly Ala Val Val Glu Thr Met Val
305                 310                 315                 320

Ala Asp Gly Ala Arg Gly Gly Ile Arg Thr
                325                 330


<210>  74
<211>  1008
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
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<222>  (1)..(1008)

<400>  74
gtg agc acg gac cgg gag cag gcc gcg cac acg cgg ctc ggt cgc agc           48
Val Ser Thr Asp Arg Glu Gln Ala Ala His Thr Arg Leu Gly Arg Ser
1               5                   10                  15

gcg acc ctg gtg agc cgg ctc tgg ctg ggc acc gtg aac ttc agc ggc           96
Ala Thr Leu Val Ser Arg Leu Trp Leu Gly Thr Val Asn Phe Ser Gly
            20                  25                  30

cgg gtc gag gac ggt gac gcg atg cag ctg atg gag gcg gcg gtc gac          144
Arg Val Glu Asp Gly Asp Ala Met Gln Leu Met Glu Ala Ala Val Asp
        35                  40                  45

cgc ggc atc aac tgc atc gac acc gcg gac atc tac ggc tgg cgg atc          192
Arg Gly Ile Asn Cys Ile Asp Thr Ala Asp Ile Tyr Gly Trp Arg Ile
    50                  55                  60

cac aag ggc cac acc gag gaa ctg gtg ggc cgg tgg ctg gcc aag agc          240
His Lys Gly His Thr Glu Glu Leu Val Gly Arg Trp Leu Ala Lys Ser
65                  70                  75                  80

gcc gcg cgg cgg gag gac gtc ctg ctg gcc acc aag gtc ggc ggg gac          288
Ala Ala Arg Arg Glu Asp Val Leu Leu Ala Thr Lys Val Gly Gly Asp
                85                  90                  95

atg agc gaa cgg ctc aac gac ggc ggc ctg tcg gcg cgg cac atc gtc          336
Met Ser Glu Arg Leu Asn Asp Gly Gly Leu Ser Ala Arg His Ile Val
            100                 105                 110

acg gcc tgc gag cag tcg ctg cgg cgc ctg ggc gtg gac cac atc gac          384
Thr Ala Cys Glu Gln Ser Leu Arg Arg Leu Gly Val Asp His Ile Asp
        115                 120                 125

ctg tac cag atg cac cgc gtc gac cac gcc gcg ccg tgg gac gag atc          432
Leu Tyr Gln Met His Arg Val Asp His Ala Ala Pro Trp Asp Glu Ile
    130                 135                 140

tgg cag gcg atg gac cgt ctg gtg gcg agc ggc aag gtg acc tac gtg          480
Trp Gln Ala Met Asp Arg Leu Val Ala Ser Gly Lys Val Thr Tyr Val
145                 150                 155                 160

ggg tcg tcg aac ttc gcc ggc tgg aac gtc gcc gcc gcg cag gac gcg          528
Gly Ser Ser Asn Phe Ala Gly Trp Asn Val Ala Ala Ala Gln Asp Ala
                165                 170                 175

gcc cgg cgg cgc cag tcc ctc ggt ctg gtg tcc gag cag tgc ctg tac          576
Ala Arg Arg Arg Gln Ser Leu Gly Leu Val Ser Glu Gln Cys Leu Tyr
            180                 185                 190

aac ctg gcg gtg cgc cac gcc gag ctg gaa ctg ctg ccg gcc gcc cag          624
Asn Leu Ala Val Arg His Ala Glu Leu Glu Leu Leu Pro Ala Ala Gln
        195                 200                 205

gcg tac gga ctg ggc gtg ttc gcc tgg tcg ccg ctg cac ggc ggg ctg          672
Ala Tyr Gly Leu Gly Val Phe Ala Trp Ser Pro Leu His Gly Gly Leu
    210                 215                 220

ctc agc ggg gtg ctg cgc aag ctc gcg gcg ggc gtc gcg gtg aag tcg          720
Leu Ser Gly Val Leu Arg Lys Leu Ala Ala Gly Val Ala Val Lys Ser
225                 230                 235                 240
```

```
gca cag ggg cgg gcc cag ctg ctg ctg ccc gag ctg cgc gcg acg atc         768
Ala Gln Gly Arg Ala Gln Leu Leu Leu Pro Glu Leu Arg Ala Thr Ile
                245                 250                 255

gag gcg tac gag ggg ttc tgc ggc cgg atc ggc gcg gat ccg gcc gag         816
Glu Ala Tyr Glu Gly Phe Cys Gly Arg Ile Gly Ala Asp Pro Ala Glu
            260                 265                 270

gtc ggt ctg gcc tgg gtg ctg tcc cgg ccg ggg atc agc ggc gcg gtg         864
Val Gly Leu Ala Trp Val Leu Ser Arg Pro Gly Ile Ser Gly Ala Val
        275                 280                 285

atc ggt ccg cgc acg gtg gac cag ctg gac tcg gcg ctg cgg tcc ctg         912
Ile Gly Pro Arg Thr Val Asp Gln Leu Asp Ser Ala Leu Arg Ser Leu
    290                 295                 300

gac ctg gtc ctc ggg gag gcc gaa ctg gcc gag ctg gac gcc atc ttc         960
Asp Leu Val Leu Gly Glu Ala Glu Leu Ala Glu Leu Asp Ala Ile Phe
305                 310                 315                 320

ccg ccc ctg ggc aag ggc ggc cgg gcg ccg gac gcg tgg atc agc tga        1008
Pro Pro Leu Gly Lys Gly Gly Arg Ala Pro Asp Ala Trp Ile Ser
                325                 330                 335


<210>  75
<211>  335
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  75

Val Ser Thr Asp Arg Glu Gln Ala Ala His Thr Arg Leu Gly Arg Ser
1               5                   10                  15


Ala Thr Leu Val Ser Arg Leu Trp Leu Gly Thr Val Asn Phe Ser Gly
            20                  25                  30


Arg Val Glu Asp Gly Asp Ala Met Gln Leu Met Glu Ala Ala Val Asp
        35                  40                  45


Arg Gly Ile Asn Cys Ile Asp Thr Ala Asp Ile Tyr Gly Trp Arg Ile
    50                  55                  60


His Lys Gly His Thr Glu Glu Leu Val Gly Arg Trp Leu Ala Lys Ser
65                  70                  75                  80


Ala Ala Arg Arg Glu Asp Val Leu Leu Ala Thr Lys Val Gly Gly Asp
                85                  90                  95


Met Ser Glu Arg Leu Asn Asp Gly Gly Leu Ser Ala Arg His Ile Val
            100                 105                 110


Thr Ala Cys Glu Gln Ser Leu Arg Arg Leu Gly Val Asp His Ile Asp
        115                 120                 125
```

```
Leu Tyr Gln Met His Arg Val Asp His Ala Ala Pro Trp Asp Glu Ile
    130                 135                 140


Trp Gln Ala Met Asp Arg Leu Val Ala Ser Gly Lys Val Thr Tyr Val
145                 150                 155                 160


Gly Ser Ser Asn Phe Ala Gly Trp Asn Val Ala Ala Ala Gln Asp Ala
                165                 170                 175


Ala Arg Arg Arg Gln Ser Leu Gly Leu Val Ser Glu Gln Cys Leu Tyr
            180                 185                 190


Asn Leu Ala Val Arg His Ala Glu Leu Glu Leu Leu Pro Ala Ala Gln
        195                 200                 205


Ala Tyr Gly Leu Gly Val Phe Ala Trp Ser Pro Leu His Gly Gly Leu
    210                 215                 220


Leu Ser Gly Val Leu Arg Lys Leu Ala Ala Gly Val Ala Val Lys Ser
225                 230                 235                 240


Ala Gln Gly Arg Ala Gln Leu Leu Leu Pro Glu Leu Arg Ala Thr Ile
                245                 250                 255


Glu Ala Tyr Glu Gly Phe Cys Gly Arg Ile Gly Ala Asp Pro Ala Glu
            260                 265                 270


Val Gly Leu Ala Trp Val Leu Ser Arg Pro Gly Ile Ser Gly Ala Val
        275                 280                 285


Ile Gly Pro Arg Thr Val Asp Gln Leu Asp Ser Ala Leu Arg Ser Leu
    290                 295                 300


Asp Leu Val Leu Gly Glu Ala Glu Leu Ala Glu Leu Asp Ala Ile Phe
305                 310                 315                 320


Pro Pro Leu Gly Lys Gly Gly Arg Ala Pro Asp Ala Trp Ile Ser
                325                 330                 335


<210>  76
<211>  1233
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1233)
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<400>  76
atg att gcc acc gcg tgc cgc gtc tgc ggc aac aag gag ctg ctc tcc       48
Met Ile Ala Thr Ala Cys Arg Val Cys Gly Asn Lys Glu Leu Leu Ser
1               5                   10                  15

gta ctc gac ctg ggc gaa cag gcg ctc acc ggg gtg ttc ccg gcc gac       96
Val Leu Asp Leu Gly Glu Gln Ala Leu Thr Gly Val Phe Pro Ala Asp
            20                  25                  30

cgc gac gag gtc gtg ccg tcg gtc ccg ctg gaa ctc gtc gcg tgt tcc      144
Arg Asp Glu Val Val Pro Ser Val Pro Leu Glu Leu Val Ala Cys Ser
        35                  40                  45

ccg gcc gga tgc ggc ctc gtg caa ctg cgc cac acc ccc gac ccg gac      192
Pro Ala Gly Cys Gly Leu Val Gln Leu Arg His Thr Pro Asp Pro Asp
    50                  55                  60

ctc atg tac ggc gag ggc tac ggc tac cgc tcg ggc atc cgg ccc ttc      240
Leu Met Tyr Gly Glu Gly Tyr Gly Tyr Arg Ser Gly Ile Arg Pro Phe
65                  70                  75                  80

atg gtc gac cac ctg cat ggc aag gtc gcc gcc gtc cgc cgg ctg gtg      288
Met Val Asp His Leu His Gly Lys Val Ala Ala Val Arg Arg Leu Val
                85                  90                  95

gac ctc ggc ccg gac gac ctg gtc ctc gac atc ggc agc aac gac gcc      336
Asp Leu Gly Pro Asp Asp Leu Val Leu Asp Ile Gly Ser Asn Asp Ala
            100                 105                 110

acg ctc ctc aag ggc tac ccc gcc gac ggc ccg cga ctg gtc ggc atc      384
Thr Leu Leu Lys Gly Tyr Pro Ala Asp Gly Pro Arg Leu Val Gly Ile
        115                 120                 125

gac ccg acc ggc ggc aag ttc cgc gac ctg tac ccg ccg aac gcc gag      432
Asp Pro Thr Gly Gly Lys Phe Arg Asp Leu Tyr Pro Pro Asn Ala Glu
    130                 135                 140

ttg gtc gtg gac tac ttc acc cgc gcg acc ttc gag aac cgc ttc ggg      480
Leu Val Val Asp Tyr Phe Thr Arg Ala Thr Phe Glu Asn Arg Phe Gly
145                 150                 155                 160

gcg cgg cgg gcg aag gcc gtc acc tcc atc gcg atg ttc tac gac ctg      528
Ala Arg Arg Ala Lys Ala Val Thr Ser Ile Ala Met Phe Tyr Asp Leu
                165                 170                 175

ccg gac ccg ctg cgc ttc atg agc gac gtc cgc gac gtc ctc gcc gag      576
Pro Asp Pro Leu Arg Phe Met Ser Asp Val Arg Asp Val Leu Ala Glu
            180                 185                 190

gac ggc gtc tgg atg atg gag cag agc tac ctg ccc gcc atg ctc gaa      624
Asp Gly Val Trp Met Met Glu Gln Ser Tyr Leu Pro Ala Met Leu Glu
        195                 200                 205

gcc gac gcg tac gac atc gtc tgc cac gag cac ctg gag tac tac gcg      672
Ala Asp Ala Tyr Asp Ile Val Cys His Glu His Leu Glu Tyr Tyr Ala
    210                 215                 220

ctg cgc cag atc gag tgg atg gcg gaa cgc gtc ggc ctc acc gtc atc      720
Leu Arg Gln Ile Glu Trp Met Ala Glu Arg Val Gly Leu Thr Val Ile
225                 230                 235                 240

cgg gcc gag ctc acc gag gtg tac ggc ggc agc ctg tgc gtc acg ctc      768
Arg Ala Glu Leu Thr Glu Val Tyr Gly Gly Ser Leu Cys Val Thr Leu
```

```
                245                 250                 255

gcc agg acc ggt tcc cgg cac ccg agg gac gag gcg ggc ctg gcc cgc      816
Ala Arg Thr Gly Ser Arg His Pro Arg Asp Glu Ala Gly Leu Ala Arg
            260                 265                 270

atc cgg gcc gcc gag gcc gcc gcg gga ctg gac ggc atg gca ccg ttc      864
Ile Arg Ala Ala Glu Ala Ala Ala Gly Leu Asp Gly Met Ala Pro Phe
        275                 280                 285

gag gcc ttc gcc cgc cgc gtc gcc gac cag cgg gac gcc ctg cgc ggc      912
Glu Ala Phe Ala Arg Arg Val Ala Asp Gln Arg Asp Ala Leu Arg Gly
    290                 295                 300

ttc ctg gac cgc tcc cgc caa gag ggc ctg ctg acc ctc ggg tac ggc      960
Phe Leu Asp Arg Ser Arg Gln Glu Gly Leu Leu Thr Leu Gly Tyr Gly
305                 310                 315                 320

gcc tcc acc aag ggc aac gtc atc ctc cag tac tgc ggg atc acc gaa     1008
Ala Ser Thr Lys Gly Asn Val Ile Leu Gln Tyr Cys Gly Ile Thr Glu
                325                 330                 335

cgg gac ctg ccg tgc atc ggc gag gtg agc gag gag aag gcg ggg cgt     1056
Arg Asp Leu Pro Cys Ile Gly Glu Val Ser Glu Glu Lys Ala Gly Arg
            340                 345                 350

ttc acc ccc ggg acg ggc atc ccc atc gtg tcc gag gag gac gcg aag     1104
Phe Thr Pro Gly Thr Gly Ile Pro Ile Val Ser Glu Glu Asp Ala Lys
        355                 360                 365

gcg cag aag ccg gac cag ttg ctg gtc ctg ccc tgg atc tac cgg gac     1152
Ala Gln Lys Pro Asp Gln Leu Leu Val Leu Pro Trp Ile Tyr Arg Asp
    370                 375                 380

ggg ttc gtc gaa cgg gag cgg gag ttc ctc gac ggc ggc ggc cga ctg     1200
Gly Phe Val Glu Arg Glu Arg Glu Phe Leu Asp Gly Gly Gly Arg Leu
385                 390                 395                 400

gtc ttc ccg ctg ccc gcg ctc gac gtc gtg tga                         1233
Val Phe Pro Leu Pro Ala Leu Asp Val Val
                405                 410


<210>  77
<211>  410
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  77

Met Ile Ala Thr Ala Cys Arg Val Cys Gly Asn Lys Glu Leu Leu Ser
1               5                   10                  15


Val Leu Asp Leu Gly Glu Gln Ala Leu Thr Gly Val Phe Pro Ala Asp
            20                  25                  30


Arg Asp Glu Val Val Pro Ser Val Pro Leu Glu Leu Val Ala Cys Ser
        35                  40                  45


Pro Ala Gly Cys Gly Leu Val Gln Leu Arg His Thr Pro Asp Pro Asp
```

```
    50                  55                  60

Leu Met Tyr Gly Glu Gly Tyr Gly Tyr Arg Ser Gly Ile Arg Pro Phe
65                  70                  75                  80

Met Val Asp His Leu His Gly Lys Val Ala Ala Val Arg Arg Leu Val
                85                  90                  95

Asp Leu Gly Pro Asp Asp Leu Val Leu Asp Ile Gly Ser Asn Asp Ala
            100                 105                 110

Thr Leu Leu Lys Gly Tyr Pro Ala Asp Gly Pro Arg Leu Val Gly Ile
        115                 120                 125

Asp Pro Thr Gly Gly Lys Phe Arg Asp Leu Tyr Pro Pro Asn Ala Glu
    130                 135                 140

Leu Val Val Asp Tyr Phe Thr Arg Ala Thr Phe Glu Asn Arg Phe Gly
145                 150                 155                 160

Ala Arg Arg Ala Lys Ala Val Thr Ser Ile Ala Met Phe Tyr Asp Leu
                165                 170                 175

Pro Asp Pro Leu Arg Phe Met Ser Asp Val Arg Asp Val Leu Ala Glu
            180                 185                 190

Asp Gly Val Trp Met Met Glu Gln Ser Tyr Leu Pro Ala Met Leu Glu
        195                 200                 205

Ala Asp Ala Tyr Asp Ile Val Cys His Glu His Leu Glu Tyr Tyr Ala
    210                 215                 220

Leu Arg Gln Ile Glu Trp Met Ala Glu Arg Val Gly Leu Thr Val Ile
225                 230                 235                 240

Arg Ala Glu Leu Thr Glu Val Tyr Gly Gly Ser Leu Cys Val Thr Leu
                245                 250                 255

Ala Arg Thr Gly Ser Arg His Pro Arg Asp Glu Ala Gly Leu Ala Arg
            260                 265                 270

Ile Arg Ala Ala Glu Ala Ala Ala Gly Leu Asp Gly Met Ala Pro Phe
        275                 280                 285

Glu Ala Phe Ala Arg Arg Val Ala Asp Gln Arg Asp Ala Leu Arg Gly
    290                 295                 300
```

```
Phe Leu Asp Arg Ser Arg Gln Glu Gly Leu Leu Thr Leu Gly Tyr Gly
305                 310                 315                 320


Ala Ser Thr Lys Gly Asn Val Ile Leu Gln Tyr Cys Gly Ile Thr Glu
                325                 330                 335


Arg Asp Leu Pro Cys Ile Gly Glu Val Ser Glu Glu Lys Ala Gly Arg
            340                 345                 350


Phe Thr Pro Gly Thr Gly Ile Pro Ile Val Ser Glu Glu Asp Ala Lys
        355                 360                 365


Ala Gln Lys Pro Asp Gln Leu Leu Val Leu Pro Trp Ile Tyr Arg Asp
    370                 375                 380


Gly Phe Val Glu Arg Glu Arg Glu Phe Leu Asp Gly Gly Gly Arg Leu
385                 390                 395                 400


Val Phe Pro Leu Pro Ala Leu Asp Val Val
                405                 410


<210>  78
<211>  1116
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1116)

<400>  78
gtg cac cgg gac aac gcc gcc gag ccg ttg gtc aaa tgc ctg gtc tgg         48
Val His Arg Asp Asn Ala Ala Glu Pro Leu Val Lys Cys Leu Val Trp
1               5                   10                  15

gac ctg gac aac acc ctc tgg cag ggc acc ctc ctc gag gag gac gag         96
Asp Leu Asp Asn Thr Leu Trp Gln Gly Thr Leu Leu Glu Glu Asp Glu
            20                  25                  30

gtc cgg ctc gcc ccg gac gtc ctg cgg acc atc acc gag ctg gac gcg        144
Val Arg Leu Ala Pro Asp Val Leu Arg Thr Ile Thr Glu Leu Asp Ala
        35                  40                  45

cgc ggc atc ctg cag gcg gtg gcc agc aag aac gac cac gat cac gcc        192
Arg Gly Ile Leu Gln Ala Val Ala Ser Lys Asn Asp His Asp His Ala
    50                  55                  60

tgg gcg aag ctc gaa cag ctc ggc gtc gcc gag tac ttc gtg ctc ccg        240
Trp Ala Lys Leu Glu Gln Leu Gly Val Ala Glu Tyr Phe Val Leu Pro
65                  70                  75                  80

agg atc ggc tgg ggc ccg aag tcg aag tcg gtc cgc gag atc gcc gac        288
Arg Ile Gly Trp Gly Pro Lys Ser Lys Ser Val Arg Glu Ile Ala Asp
                85                  90                  95
```

```
cgg ctg aac ttc gcg ccg agc acc ctc gcc ttc atc gac gac cag ccc       336
Arg Leu Asn Phe Ala Pro Ser Thr Leu Ala Phe Ile Asp Asp Gln Pro
            100                 105                 110

ttc gaa cgg gcc gag gtc acc cac gaa ctg ccg gag gtc cgc acc tac       384
Phe Glu Arg Ala Glu Val Thr His Glu Leu Pro Glu Val Arg Thr Tyr
        115                 120                 125

gcc gcc gag cag gcg acc cgg ctg acc ggc ctc ccg gag ttc agc ccg       432
Ala Ala Glu Gln Ala Thr Arg Leu Thr Gly Leu Pro Glu Phe Ser Pro
    130                 135                 140

ggc acc gtc acc gtc gac tcg acc cgc cgc cgc tcc atg tac cag gcg       480
Gly Thr Val Thr Val Asp Ser Thr Arg Arg Arg Ser Met Tyr Gln Ala
145                 150                 155                 160

tcc ttc cgc cgg gac gcc gag cgg tcc gac ttc acc gga ccc gac gcg       528
Ser Phe Arg Arg Asp Ala Glu Arg Ser Asp Phe Thr Gly Pro Asp Ala
                165                 170                 175

gac ttc ctg cgc tcg ctg gac atc cgg atg cgg atc agc cgc gcc acg       576
Asp Phe Leu Arg Ser Leu Asp Ile Arg Met Arg Ile Ser Arg Ala Thr
            180                 185                 190

ccc ctg gag ctg tcg cgg gtc gag gaa ctg acc ctg cgc acc agc cag       624
Pro Leu Glu Leu Ser Arg Val Glu Glu Leu Thr Leu Arg Thr Ser Gln
        195                 200                 205

atg aac gcc acc gga gtg cac tac tcc gag gac gag ctg cgc gcc ctc       672
Met Asn Ala Thr Gly Val His Tyr Ser Glu Asp Glu Leu Arg Ala Leu
    210                 215                 220

atc gac gac ccc gac cac gag gtg ctg gtc acc acc gtc acc gat cgc       720
Ile Asp Asp Pro Asp His Glu Val Leu Val Thr Thr Val Thr Asp Arg
225                 230                 235                 240

ttc ggt ccc tac ggc gcg gtc ggc gtc gtg ctg ctg cgg cgc ggc ccc       768
Phe Gly Pro Tyr Gly Ala Val Gly Val Val Leu Leu Arg Arg Gly Pro
                245                 250                 255

gag gcc tgg cgg atc aag ctg ctg gcc acc tcg tgc cgg gtg gtg tcg       816
Glu Ala Trp Arg Ile Lys Leu Leu Ala Thr Ser Cys Arg Val Val Ser
            260                 265                 270

ctg ggg gcc ggc acg gtg atc ctg cgc tgg ctg acg gac cag gcg cac       864
Leu Gly Ala Gly Thr Val Ile Leu Arg Trp Leu Thr Asp Gln Ala His
        275                 280                 285

cgg gcc ggg gtg cac ctc gga gcc gac ttc cgg gcc acc gaa cgc aac       912
Arg Ala Gly Val His Leu Gly Ala Asp Phe Arg Ala Thr Glu Arg Asn
    290                 295                 300

cgg atg atg gaa gtg gcc tac cgc ttc gcc gga ttc acc gac gat ccc       960
Arg Met Met Glu Val Ala Tyr Arg Phe Ala Gly Phe Thr Asp Asp Pro
305                 310                 315                 320

tgc ccg tgc cag gac gcc tcc gcc gcc acc ggc gcg atc ggc cgc ctg      1008
Cys Pro Cys Gln Asp Ala Ser Ala Ala Thr Gly Ala Ile Gly Arg Leu
                325                 330                 335

cac ctg gtg ccg tcc ccc cgg ccc gcc ccc gac acc ctc cgt ctg gaa      1056
His Leu Val Pro Ser Pro Arg Pro Ala Pro Asp Thr Leu Arg Leu Glu
            340                 345                 350
```

```
gct ccc gac ctg gcc acg ggc cgg cgg cgc ccc ggc cag gat ccc gaa        1104
Ala Pro Asp Leu Ala Thr Gly Arg Arg Arg Pro Gly Gln Asp Pro Glu
        355                 360                 365

agg acc cca tga                                                        1116
Arg Thr Pro
    370


<210>  79
<211>  371
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  79

Val His Arg Asp Asn Ala Ala Glu Pro Leu Val Lys Cys Leu Val Trp
1               5                   10                  15


Asp Leu Asp Asn Thr Leu Trp Gln Gly Thr Leu Leu Glu Glu Asp Glu
            20                  25                  30


Val Arg Leu Ala Pro Asp Val Leu Arg Thr Ile Thr Glu Leu Asp Ala
        35                  40                  45


Arg Gly Ile Leu Gln Ala Val Ala Ser Lys Asn Asp His Asp His Ala
    50                  55                  60


Trp Ala Lys Leu Glu Gln Leu Gly Val Ala Glu Tyr Phe Val Leu Pro
65                  70                  75                  80


Arg Ile Gly Trp Gly Pro Lys Ser Lys Ser Val Arg Glu Ile Ala Asp
                85                  90                  95


Arg Leu Asn Phe Ala Pro Ser Thr Leu Ala Phe Ile Asp Asp Gln Pro
            100                 105                 110


Phe Glu Arg Ala Glu Val Thr His Glu Leu Pro Glu Val Arg Thr Tyr
        115                 120                 125


Ala Ala Glu Gln Ala Thr Arg Leu Thr Gly Leu Pro Glu Phe Ser Pro
    130                 135                 140


Gly Thr Val Thr Val Asp Ser Thr Arg Arg Arg Ser Met Tyr Gln Ala
145                 150                 155                 160


Ser Phe Arg Arg Asp Ala Glu Arg Ser Asp Phe Thr Gly Pro Asp Ala
                165                 170                 175


Asp Phe Leu Arg Ser Leu Asp Ile Arg Met Arg Ile Ser Arg Ala Thr
            180                 185                 190
```

```
Pro Leu Glu Leu Ser Arg Val Glu Glu Leu Thr Leu Arg Thr Ser Gln
        195                 200                 205

Met Asn Ala Thr Gly Val His Tyr Ser Glu Asp Glu Leu Arg Ala Leu
    210                 215                 220

Ile Asp Asp Pro Asp His Glu Val Leu Val Thr Thr Val Thr Asp Arg
225                 230                 235                 240

Phe Gly Pro Tyr Gly Ala Val Gly Val Val Leu Leu Arg Arg Gly Pro
                245                 250                 255

Glu Ala Trp Arg Ile Lys Leu Leu Ala Thr Ser Cys Arg Val Val Ser
            260                 265                 270

Leu Gly Ala Gly Thr Val Ile Leu Arg Trp Leu Thr Asp Gln Ala His
        275                 280                 285

Arg Ala Gly Val His Leu Gly Ala Asp Phe Arg Ala Thr Glu Arg Asn
    290                 295                 300

Arg Met Met Glu Val Ala Tyr Arg Phe Ala Gly Phe Thr Asp Asp Pro
305                 310                 315                 320

Cys Pro Cys Gln Asp Ala Ser Ala Ala Thr Gly Ala Ile Gly Arg Leu
                325                 330                 335

His Leu Val Pro Ser Pro Arg Pro Ala Pro Asp Thr Leu Arg Leu Glu
            340                 345                 350

Ala Pro Asp Leu Ala Thr Gly Arg Arg Arg Pro Gly Gln Asp Pro Glu
        355                 360                 365

Arg Thr Pro
    370


<210>  80
<211>  1122
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1122)

<400>  80
gtg gct gac acc tcc cac gcc gac ggc acc gag gcc gag gag ctg ttc        48
Val Ala Asp Thr Ser His Ala Asp Gly Thr Glu Ala Glu Glu Leu Phe
```

```
1               5                   10                  15

acc gcg ctg gtc ggc gac cgg gcg gcc gag tgg gac cgg acg ggc gag       96
Thr Ala Leu Val Gly Asp Arg Ala Ala Glu Trp Asp Arg Thr Gly Glu
            20                  25                  30

ctg ccc ctc ggc ctg ctg cac gac ctc ggc tcc cgg ggc ctg ctg tgc      144
Leu Pro Leu Gly Leu Leu His Asp Leu Gly Ser Arg Gly Leu Leu Cys
        35                  40                  45

gca cag gcg ccc gcg gtc cac ggc ggc ctc ggc tgg acc agc cgg cgc      192
Ala Gln Ala Pro Ala Val His Gly Gly Leu Gly Trp Thr Ser Arg Arg
    50                  55                  60

aac ggc gaa ctc acc gcg cac gtc ggc gcc ctc tgc agc tcg ttg cgg      240
Asn Gly Glu Leu Thr Ala His Val Gly Ala Leu Cys Ser Ser Leu Arg
65                  70                  75                  80

agc gtc atg acc tcg cag ggc atg gcc gcc tgg acg ctg cgc cgg ctc      288
Ser Val Met Thr Ser Gln Gly Met Ala Ala Trp Thr Leu Arg Arg Leu
                85                  90                  95

gcc gga gcg gac cag cag gcc tcc ctg gtg ccc cgg ttg acc ggc ggc      336
Ala Gly Ala Asp Gln Gln Ala Ser Leu Val Pro Arg Leu Thr Gly Gly
            100                 105                 110

gaa ctg gcc gcc gtg gcg ttc acc gag gcc ggc gcc ggc agc gac ctg      384
Glu Leu Ala Ala Val Ala Phe Thr Glu Ala Gly Ala Gly Ser Asp Leu
        115                 120                 125

tcc gcc ctg cgc acc cgc atc acc tcc gac ggc gac gaa gtc gtc gtc      432
Ser Ala Leu Arg Thr Arg Ile Thr Ser Asp Gly Asp Glu Val Val Val
    130                 135                 140

gac ggc gtc aag gtg tgg gcg acc aac gcc gcg tac gcg gac ctg ctg      480
Asp Gly Val Lys Val Trp Ala Thr Asn Ala Ala Tyr Ala Asp Leu Leu
145                 150                 155                 160

gtg gtc ttc ggc cgc acg gag cag ggc gcg ggc gcc gtc gtg gtg ccc      528
Val Val Phe Gly Arg Thr Glu Gln Gly Ala Gly Ala Val Val Val Pro
                165                 170                 175

gcc tcg gcc ccc ggc gta cgc gtc gag cgc atc acc gac gcg cac ggc      576
Ala Ser Ala Pro Gly Val Arg Val Glu Arg Ile Thr Asp Ala His Gly
            180                 185                 190

tgc cgc gcg gcc gga cac gcc gac atc cac ctg gac ggg gtc cgg ctg      624
Cys Arg Ala Ala Gly His Ala Asp Ile His Leu Asp Gly Val Arg Leu
        195                 200                 205

ccg gca gac gcc ctg ctc cag ggc cac gac cgc acc ccc gcc ctg ctg      672
Pro Ala Asp Ala Leu Leu Gln Gly His Asp Arg Thr Pro Ala Leu Leu
    210                 215                 220

gtc acc acc gcg ctg agc tac ggc cgg atg tcg gtg gcc tgg ggc tcc      720
Val Thr Thr Ala Leu Ser Tyr Gly Arg Met Ser Val Ala Trp Gly Ser
225                 230                 235                 240

ctg ggc atc ctg cgc gcc tgc ctg gcc gcc gcc gca cgt cac gcc ggc      768
Leu Gly Ile Leu Arg Ala Cys Leu Ala Ala Ala Ala Arg His Ala Gly
                245                 250                 255

gga cgg gag cag ttc ggc acg cgg ctc tcg gac cac cag ctc gtc gcc      816
```

```
Gly Arg Glu Gln Phe Gly Thr Arg Leu Ser Asp His Gln Leu Val Ala
            260                 265                 270

cgg cac ctc gcc gaa ctg ttc gtc gcc gaa cag cac gcc gcc cgg gcg         864
Arg His Leu Ala Glu Leu Phe Val Ala Glu Gln His Ala Ala Arg Ala
        275                 280                 285

tgc gag cac gcc agc gcc cag tgg gac gag ggc agc ccc gac atg gtg         912
Cys Glu His Ala Ser Ala Gln Trp Asp Glu Gly Ser Pro Asp Met Val
    290                 295                 300

gtc gcc gcc gtc ctg gcc aag cac gtc gcg gcc acc ggc gcc gca cgc         960
Val Ala Ala Val Leu Ala Lys His Val Ala Ala Thr Gly Ala Ala Arg
305                 310                 315                 320

ggg gcc gaa cgg gcc gtg cag gtg ctg gcg tcg gcc ggg gcg cgg gag        1008
Gly Ala Glu Arg Ala Val Gln Val Leu Ala Ser Ala Gly Ala Arg Glu
                325                 330                 335

gga cac gtc gtc gca cgg gcg cac cgc gac gcc aag ctc atg gag atc        1056
Gly His Val Val Ala Arg Ala His Arg Asp Ala Lys Leu Met Glu Ile
            340                 345                 350

atc gag ggc agc aac gag atc tgc gaa ctg gtc ctg gcc cgg cac gtg        1104
Ile Glu Gly Ser Asn Glu Ile Cys Glu Leu Val Leu Ala Arg His Val
        355                 360                 365

atg tcc gcg gcc ggg tga                                                1122
Met Ser Ala Ala Gly
    370


<210>  81
<211>  373
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  81

Val Ala Asp Thr Ser His Ala Asp Gly Thr Glu Ala Glu Glu Leu Phe
1               5                   10                  15


Thr Ala Leu Val Gly Asp Arg Ala Ala Glu Trp Asp Arg Thr Gly Glu
            20                  25                  30


Leu Pro Leu Gly Leu Leu His Asp Leu Gly Ser Arg Gly Leu Leu Cys
        35                  40                  45


Ala Gln Ala Pro Ala Val His Gly Gly Leu Gly Trp Thr Ser Arg Arg
    50                  55                  60


Asn Gly Glu Leu Thr Ala His Val Gly Ala Leu Cys Ser Ser Leu Arg
65                  70                  75                  80


Ser Val Met Thr Ser Gln Gly Met Ala Ala Trp Thr Leu Arg Arg Leu
                85                  90                  95
```

```
Ala Gly Ala Asp Gln Gln Ala Ser Leu Val Pro Arg Leu Thr Gly Gly
            100                 105                 110

Glu Leu Ala Ala Val Ala Phe Thr Glu Ala Gly Ala Gly Ser Asp Leu
        115                 120                 125

Ser Ala Leu Arg Thr Arg Ile Thr Ser Asp Gly Asp Glu Val Val Val
    130                 135                 140

Asp Gly Val Lys Val Trp Ala Thr Asn Ala Ala Tyr Ala Asp Leu Leu
145                 150                 155                 160

Val Val Phe Gly Arg Thr Glu Gln Gly Ala Gly Ala Val Val Val Pro
                165                 170                 175

Ala Ser Ala Pro Gly Val Arg Val Glu Arg Ile Thr Asp Ala His Gly
            180                 185                 190

Cys Arg Ala Ala Gly His Ala Asp Ile His Leu Asp Gly Val Arg Leu
        195                 200                 205

Pro Ala Asp Ala Leu Leu Gln Gly His Asp Arg Thr Pro Ala Leu Leu
    210                 215                 220

Val Thr Thr Ala Leu Ser Tyr Gly Arg Met Ser Val Ala Trp Gly Ser
225                 230                 235                 240

Leu Gly Ile Leu Arg Ala Cys Leu Ala Ala Ala Ala Arg His Ala Gly
                245                 250                 255

Gly Arg Glu Gln Phe Gly Thr Arg Leu Ser Asp His Gln Leu Val Ala
            260                 265                 270

Arg His Leu Ala Glu Leu Phe Val Ala Glu Gln His Ala Ala Arg Ala
        275                 280                 285

Cys Glu His Ala Ser Ala Gln Trp Asp Glu Gly Ser Pro Asp Met Val
    290                 295                 300

Val Ala Ala Val Leu Ala Lys His Val Ala Ala Thr Gly Ala Ala Arg
305                 310                 315                 320

Gly Ala Glu Arg Ala Val Gln Val Leu Ala Ser Ala Gly Ala Arg Glu
                325                 330                 335

Gly His Val Val Ala Arg Ala His Arg Asp Ala Lys Leu Met Glu Ile
            340                 345                 350
```

```
Ile Glu Gly Ser Asn Glu Ile Cys Glu Leu Val Leu Ala Arg His Val
        355                 360                 365


Met Ser Ala Ala Gly
    370


<210>  82
<211>  312
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(312)

<400>  82
atg acc acg acg tcc ggt cgg ccc gac ccc acc ggc acg acc ccc acc       48
Met Thr Thr Thr Ser Gly Arg Pro Asp Pro Thr Gly Thr Thr Pro Thr
1               5                   10                  15

gcc gac gag gtc gcc ggg gaa ctg ctc ggg ttc ctc gag gac cgc acc       96
Ala Asp Glu Val Ala Gly Glu Leu Leu Gly Phe Leu Glu Asp Arg Thr
            20                  25                  30

aag acc acc tgg gag cgc gac cag gac ctg ttc gcc gtc ggc ggg atg      144
Lys Thr Thr Trp Glu Arg Asp Gln Asp Leu Phe Ala Val Gly Gly Met
        35                  40                  45

tcc tcg ctg ttc gcc atg cag ctc gtc gtg cac ctg gag aag acc tac      192
Ser Ser Leu Phe Ala Met Gln Leu Val Val His Leu Glu Lys Thr Tyr
    50                  55                  60

ggc atc gtc atc agc ggc gcc gac ctg atg ctc gac aac ttc cgc acc      240
Gly Ile Val Ile Ser Gly Ala Asp Leu Met Leu Asp Asn Phe Arg Thr
65                  70                  75                  80

gtc gac gcg atg gtc cgg ctg gtc gga cgg ctg gcc gcg ccc ggc gag      288
Val Asp Ala Met Val Arg Leu Val Gly Arg Leu Ala Ala Pro Gly Glu
                85                  90                  95

gcg acc ggg cac gca ggt ggc tga                                      312
Ala Thr Gly His Ala Gly Gly
            100


<210>  83
<211>  103
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  83

Met Thr Thr Thr Ser Gly Arg Pro Asp Pro Thr Gly Thr Thr Pro Thr
1               5                   10                  15


Ala Asp Glu Val Ala Gly Glu Leu Leu Gly Phe Leu Glu Asp Arg Thr
            20                  25                  30
```

```
Lys Thr Thr Trp Glu Arg Asp Gln Asp Leu Phe Ala Val Gly Gly Met
        35                  40                  45


Ser Ser Leu Phe Ala Met Gln Leu Val Val His Leu Glu Lys Thr Tyr
    50                  55                  60


Gly Ile Val Ile Ser Gly Ala Asp Leu Met Leu Asp Asn Phe Arg Thr
65                  70                  75                  80


Val Asp Ala Met Val Arg Leu Val Gly Arg Leu Ala Ala Pro Gly Glu
                85                  90                  95


Ala Thr Gly His Ala Gly Gly
            100


<210>  84
<211>  867
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(867)

<400>  84
gtg ccc gat tcc aag gaa aat tct ccg ctc gtc gtg ctc ggc gcg ggc         48
Val Pro Asp Ser Lys Glu Asn Ser Pro Leu Val Val Leu Gly Ala Gly
1               5                   10                  15

gtc atg ggc acg gcc atc gcg gca ctc gcc gtc gga cac ggg cac ccg         96
Val Met Gly Thr Ala Ile Ala Ala Leu Ala Val Gly His Gly His Pro
            20                  25                  30

gtc aca ctg gtc gac acc tcc gcc ggg gcg cgc gcg gcc gcc ccc gac        144
Val Thr Leu Val Asp Thr Ser Ala Gly Ala Arg Ala Ala Ala Pro Asp
        35                  40                  45

gcg gtc gcg ctg cat ctg cgg acg gcc cgg ctg atg ggc gcg ctg ccc        192
Ala Val Ala Leu His Leu Arg Thr Ala Arg Leu Met Gly Ala Leu Pro
    50                  55                  60

cac gac cgc ccg ccc ggg gag ctg acc gtc gag gag gcg ccg gcc gcc        240
His Asp Arg Pro Pro Gly Glu Leu Thr Val Glu Glu Ala Pro Ala Ala
65                  70                  75                  80

gtc gcc acc gcg acc gcc gtg atc gag gcc gtc acc gag gac ccc gag        288
Val Ala Thr Ala Thr Ala Val Ile Glu Ala Val Thr Glu Asp Pro Glu
                85                  90                  95

cgg aag gcc gag gtg ctg gcg gac ctg gcg tcc gtg gcg cgc ccg ggg        336
Arg Lys Ala Glu Val Leu Ala Asp Leu Ala Ser Val Ala Arg Pro Gly
            100                 105                 110

acg ctg ctc gtc agc aac acc tcg ggc gtc ccc atc gac gag ctg gcc        384
Thr Leu Leu Val Ser Asn Thr Ser Gly Val Pro Ile Asp Glu Leu Ala
        115                 120                 125
```

```
gac gcc gtc ccc cgc ccc gag gac ctc gtc ggc gtg cac ttc atg aac         432
Asp Ala Val Pro Arg Pro Glu Asp Leu Val Gly Val His Phe Met Asn
    130                 135                 140

ccc gcg tac gtg atc ccc acg gtc gag gtg gtc ctc gga ccg cgc agc         480
Pro Ala Tyr Val Ile Pro Thr Val Glu Val Val Leu Gly Pro Arg Ser
145                 150                 155                 160

gga gag gcg gcc gcc cgg gcc acc cgg gac ctg ctg tcc ggc ctg ggc         528
Gly Glu Ala Ala Ala Arg Ala Thr Arg Asp Leu Leu Ser Gly Leu Gly
                165                 170                 175

cgc cgg ggc atc gtc gtc ggc gac ggc gcc ggc ttc gtg acc agc cgc         576
Arg Arg Gly Ile Val Val Gly Asp Gly Ala Gly Phe Val Thr Ser Arg
            180                 185                 190

ctg ctg cac cgg atg ctg aac gac gcc atc gcg gtg gtg cac gag ggc         624
Leu Leu His Arg Met Leu Asn Asp Ala Ile Ala Val Val His Glu Gly
        195                 200                 205

cgg gcc acc ccg gag acc gtg gac gcg ctg atg cgc gac tgc atc ggc         672
Arg Ala Thr Pro Glu Thr Val Asp Ala Leu Met Arg Asp Cys Ile Gly
    210                 215                 220

cac cgc acc gga ccc ctg gcc acg gcc gac ctg atc gga ctg gac aac         720
His Arg Thr Gly Pro Leu Ala Thr Ala Asp Leu Ile Gly Leu Asp Asn
225                 230                 235                 240

ctg gcc gac tcg ctg cgg gtg atg cac gaa cgg acc ggc gat ccg gcg         768
Leu Ala Asp Ser Leu Arg Val Met His Glu Arg Thr Gly Asp Pro Ala
                245                 250                 255

ctc cgc ccg agc gag ctg ctg ctg gac aag gtc cgc cag ggc ctg ctc         816
Leu Arg Pro Ser Glu Leu Leu Leu Asp Lys Val Arg Gln Gly Leu Leu
            260                 265                 270

ggc cgc aag agc ggc cgg gga ttc tac gac tac cag gag gcc acg cga         864
Gly Arg Lys Ser Gly Arg Gly Phe Tyr Asp Tyr Gln Glu Ala Thr Arg
        275                 280                 285

tga                                                                     867


<210>  85
<211>  288
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  85

Val Pro Asp Ser Lys Glu Asn Ser Pro Leu Val Val Leu Gly Ala Gly
1               5                   10                  15


Val Met Gly Thr Ala Ile Ala Ala Leu Ala Val Gly His Gly His Pro
            20                  25                  30


Val Thr Leu Val Asp Thr Ser Ala Gly Ala Arg Ala Ala Ala Pro Asp
        35                  40                  45
```

```
Ala Val Ala Leu His Leu Arg Thr Ala Arg Leu Met Gly Ala Leu Pro
    50                  55                  60

His Asp Arg Pro Pro Gly Glu Leu Thr Val Glu Glu Ala Pro Ala Ala
65                  70                  75                  80

Val Ala Thr Ala Thr Ala Val Ile Glu Ala Val Thr Glu Asp Pro Glu
                85                  90                  95

Arg Lys Ala Glu Val Leu Ala Asp Leu Ala Ser Val Ala Arg Pro Gly
            100                 105                 110

Thr Leu Leu Val Ser Asn Thr Ser Gly Val Pro Ile Asp Glu Leu Ala
        115                 120                 125

Asp Ala Val Pro Arg Pro Glu Asp Leu Val Gly Val His Phe Met Asn
    130                 135                 140

Pro Ala Tyr Val Ile Pro Thr Val Glu Val Val Leu Gly Pro Arg Ser
145                 150                 155                 160

Gly Glu Ala Ala Ala Arg Ala Thr Arg Asp Leu Leu Ser Gly Leu Gly
                165                 170                 175

Arg Arg Gly Ile Val Val Gly Asp Gly Ala Gly Phe Val Thr Ser Arg
            180                 185                 190

Leu Leu His Arg Met Leu Asn Asp Ala Ile Ala Val Val His Glu Gly
        195                 200                 205

Arg Ala Thr Pro Glu Thr Val Asp Ala Leu Met Arg Asp Cys Ile Gly
    210                 215                 220

His Arg Thr Gly Pro Leu Ala Thr Ala Asp Leu Ile Gly Leu Asp Asn
225                 230                 235                 240

Leu Ala Asp Ser Leu Arg Val Met His Glu Arg Thr Gly Asp Pro Ala
                245                 250                 255

Leu Arg Pro Ser Glu Leu Leu Leu Asp Lys Val Arg Gln Gly Leu Leu
            260                 265                 270

Gly Arg Lys Ser Gly Arg Gly Phe Tyr Asp Tyr Gln Glu Ala Thr Arg
        275                 280                 285

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<211>  1040
<212>  DNA
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<213>  Streptomyces fradiae

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tcgccgcgcg cgggcgctat ctgctgggtg ccgaactcgc cgcgttcgag gagcggttcg     180

ccgagtactg cggcaacgcc cactgtgtcg ccgtgggcag cgggctcgac gacgctcgtc     240

tggcgctgtg ggcgctcggg gtgggcgagg gcgacgaggt gatcgtgccc tcgcacacgt     300

tcatcgcgtc ctggctcgcg gtgtcggcga cgggtgccac cccggtgccg gtcgagcccg     360

gtgatcccgg cgagccgggg cccggggcgt tcctgctcga cccggaccgg ctggaggccg     420

cgctgacccc gcggaccagg gccgtgatgc ccgtgcatct ctacgggcac ccggtggatc     480

tggacccggt cggggcgttc gcggagccgc acgggctggc cgtcgtggag gacgcggcgc     540

aggccacggc ccgttaccgc gggaggcgga tcggcagcgg ccaccgcacg gcgttcagct     600

tctacccggg gaagaacctg ggcgcgctcg gcgacggcgg tgccgtggtc acctcggacc     660

cggaactcgc ggaccggctg cggctgttgc gcaactacgg cgcccgggag aagtaccggc     720

acgaggagcg gggcaccaac tcccgcctgg acgagctgca ggcggccgtg ctgtcggtca     780

agctgccgta cctggacgcc tggaacaccc gccgccggga gatcgccgcc cgctacggcg     840

aggcgctggc cggtctgccg ggcgtcaccg tgccggaggg ccgcgtggcg gagccggtct     900

ggcatcagta cgtgctgcgc agcccgtacc gcgaccggtt gcggcggcgg ctggccgagg     960

cgggggtgga gaccctggtc cactatccgg tggccgtgca cgcgtcgggc gcgtacgcgg    1020

gcgcggggcc gtgtcccgcc                                                1040


<210>  87
<211>  388
<212>  PRT
<213>  Streptomyces fradiae

<400>  87

Met Thr Gly Leu Pro Arg Pro Ala Val Arg Val Pro Phe His Asp Leu
1               5                   10                  15


Arg Asp Val His Ala Ala Thr Gly Val Glu Ser Glu Ile Gly Gly Ala
            20                  25                  30


Leu Leu Arg Val Ala Ala Arg Gly Arg Tyr Leu Leu Gly Ala Glu Leu
        35                  40                  45


Ala Ala Phe Glu Glu Arg Phe Ala Glu Tyr Cys Gly Asn Ala His Cys
    50                  55                  60
```

```
Val Ala Val Gly Ser Gly Leu Asp Asp Ala Arg Leu Ala Leu Trp Ala
65                  70                  75                  80

Leu Gly Val Gly Glu Gly Asp Glu Val Ile Val Pro Ser His Thr Phe
                85                  90                  95

Ile Ala Ser Trp Leu Ala Val Ser Ala Thr Gly Ala Thr Pro Val Pro
            100                 105                 110

Val Glu Pro Gly Asp Pro Gly Glu Pro Gly Pro Gly Ala Phe Leu Leu
        115                 120                 125

Asp Pro Asp Arg Leu Glu Ala Ala Leu Thr Pro Arg Thr Arg Ala Val
    130                 135                 140

Met Pro Val His Leu Tyr Gly His Pro Val Asp Leu Asp Pro Val Gly
145                 150                 155                 160

Ala Phe Ala Glu Pro His Gly Leu Ala Val Val Glu Asp Ala Ala Gln
                165                 170                 175

Ala Thr Ala Arg Tyr Arg Gly Arg Arg Ile Gly Ser Gly His Arg Thr
            180                 185                 190

Ala Phe Ser Phe Tyr Pro Gly Lys Asn Leu Gly Ala Leu Gly Asp Gly
        195                 200                 205

Gly Ala Val Val Thr Ser Asp Pro Glu Leu Ala Asp Arg Leu Arg Leu
    210                 215                 220

Leu Arg Asn Tyr Gly Ala Arg Glu Lys Tyr Arg His Glu Glu Arg Gly
225                 230                 235                 240

Thr Asn Ser Arg Leu Asp Glu Leu Gln Ala Ala Val Leu Ser Val Lys
                245                 250                 255

Leu Pro Tyr Leu Asp Ala Trp Asn Thr Arg Arg Arg Glu Ile Ala Ala
            260                 265                 270

Arg Tyr Gly Glu Ala Leu Ala Gly Leu Pro Gly Val Thr Val Pro Glu
        275                 280                 285

Gly Arg Val Ala Glu Pro Val Trp His Gln Tyr Val Leu Arg Ser Pro
    290                 295                 300

Tyr Arg Asp Arg Leu Arg Arg Arg Leu Ala Glu Ala Gly Val Glu Thr
305                 310                 315                 320
```

```
Leu Val His Tyr Pro Val Ala Val His Ala Ser Gly Ala Tyr Ala Gly
                325                 330                 335

Ala Gly Pro Cys Pro Ala Gly Gly Leu Pro Arg Ala Glu Arg Leu Ala
            340                 345                 350

Gly Glu Val Leu Ser Leu Pro Ile Gly Pro His Leu Pro Asp Glu Ala
        355                 360                 365

Val Glu Val Val Ile Ala Ala Val Gln Ser Ala Ala Leu Asp Ser Trp
    370                 375                 380

Glu Glu Gly Pro
385


<210>  88
<211>  271
<212>  PRT
<213>  Streptomyces mycarofaciens

<400>  88

Met Ser Pro Ile Ser Ala Ser Ala Pro Ala Ala Ser Arg Ser Thr Ala
1               5                   10                  15

Arg Arg Glu Leu Gly Gln Asn Phe Phe Arg Ser Ala Ala Ala Ala Cys
            20                  25                  30

Arg Phe Ser Asp Gln Leu Asp Ala Phe Cys Ala Asp Leu Pro Gly Ser
        35                  40                  45

Leu Ala Asp Val Leu Thr Val Glu Ile Gly Ala Gly Ser Gly Arg Val
    50                  55                  60

Thr Lys Ala Leu Ala Ser Ala Gly Arg Ser Leu Leu Ala Val Glu Ile
65                  70                  75                  80

Asp Ala Tyr Trp Ala Arg Arg Leu Thr Ala Glu Ser Leu Pro Asp Val
                85                  90                  95

Thr Val Val Asn Glu Asp Phe Leu Asn Leu Gln Leu Pro Arg Gln Pro
            100                 105                 110

Ile Arg Leu Ile Gly Asn Leu Pro Phe Val Ser Gly Thr Lys Ile Leu
        115                 120                 125

Arg Arg Cys Leu Glu Leu Gly Pro Asn Arg Met Cys Gln Ala Val Phe
    130                 135                 140
```

```
Leu Leu Gln Arg Glu Tyr Val Gly Lys Arg Thr Gly Ala Trp Gly Gly
145                 150                 155                 160


Asn Leu Phe Asn Ala Gln Trp Glu Pro Trp Tyr Thr Phe Glu Gly Gly
                165                 170                 175


Leu Ala Phe Ser Arg Asn Glu Phe Ser Pro Val Pro Arg Ala Asp Thr
            180                 185                 190


Gln Thr Leu Val Val Met Pro Arg Arg Arg Pro Ser Val Pro Trp Arg
        195                 200                 205


Glu Arg Thr Asp Tyr Gln Arg Phe Thr Gln Gln Ile Phe Asp Thr Gly
    210                 215                 220


Gln Met Thr Ile Gly Glu Ala Ala Arg Lys Val Leu Arg Arg Gly His
225                 230                 235                 240


Ala Gln Phe Val Arg Ser Ala Gly Val Arg Pro Ala Asp Arg Val Lys
                245                 250                 255


Asp Leu Thr Val Arg Asp Trp Ala Ala Leu Phe Arg Ala Asn Pro
            260                 265                 270


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<220>
<223>  Oligonucléotide SRMR1

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<212>  DNA
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<210>  91
<211>  2755
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<220>
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<223> Cassette excisable

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tgtcacgcag ttagacactc accttcccac gggcggtgtc gtagggctcg gctaagttgc 180

ccgcatgact gacagggatc cctcgagaag ctttatgctt gtaaaccgtt ttgtgaaaaa 240

atttttaaaa taaaaaaggg gacctctagg gtccccaatt aattagtaat ataatctatt 300

aaaggtcatt caaaaggtca tccaccggat caattcccct gctcgcgcag gctgggtgcc 360

aagctctcgg gtaacatcaa ggcccgatcc ttggagccct tgccctcccg cacgatgatc 420

gtgccgtgat cgaaatccag atccttgacc cgcagttgca aaccctcact gatccgtaat 480

gtgagttagc tcactcatta ggcaccccag gctttacact ttatgcttcc ggctcgtatg 540

ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga ccatgattac 600

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tgtgaataga ggtccgctgt gacacaagaa tccctgttac ttctcgaccg tattgattcg 840

gatgattcct acgcgagcct gcggaacgac caggaattct gggagccgct ggcccgccga 900

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<211> 2208
<212> DNA
<213> Artificial

<220>
<223> Cassette excisable

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cgtgtctatc tgcgtgacta tcgcgccgga ccccgcttga agatgccgtc catgaccaca 180

gcgccggtct ggatgacggg ccggatctgc ttccggtaga cctcctcagt cacggccgta 240

ccggagtgtc cgacgagccg ggagatctgt taacaagctt tatgcttgta aaccgttttg 300

tgaaaaaatt tttaaaataa aaaaggggac ctctagggtc cccaattaat tagtaatata 360

atctattaaa ggtcattcaa aaggtcatcc accggatcaa ttcccctgct cgcgcaggct 420

gggtgccaag ctctcgggta acatcaaggc ccgatccttg gagcccttgc cctcccgcac 480

gatgatcgtg ccgtgatcga aatccagatc cttgacccgc agttgcaaac cctcactgat 540

ccggctcacg gtaactgatg ccgtatttgc agtaccagcg tacggcccac agaatgatgt 600

cacgctgaaa atgccggcct ttgaatgggt tcatgtgcag ctccatcagc aaaaggggat 660 gataagttta tcaccaccga ctatttgcaa cagtgccgtt gatcgtgcta tgatcgactg 720

atgtcatcag cggtggagtg caatgtcgtg caatacgaat ggcgaaaagc cgagctcatc 780

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caaggtcgcg ctgattgctg ggcaacacg tgaaaggcga gatcaccaag gtagtcggca 1620

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gagggcttta ctaagctgat ccggtggatg accttttgaa tgacctttaa tagattatat 1920

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cggtttacaa gcataaagct tctcgaggga tccctgtcag tcatgcgggc aacttagccg 2040

agccctacga caccgcccgt gggaaggtga gtgtctaact gcgtgacaac gccagcgcac 2100

agcggcggac aaccgcgagc acccatggac tggcgccgca ggtgagaagc acactggccc 2160

aaggtcgagc gcccacccaa gttgcttcgg gacgaagagg cagatatc 2208

<210> 93
<211> 60
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide ORF2A

<400> 93

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<212>  DNA
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<220>
<223>  Oligonucléotide ORF2B

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<210>  95
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<212>  DNA
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<223>  Cicatrice att3

<400>  95
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<211>  59
<212>  DNA
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<220>
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<210>  97
<211>  60
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide EDR9

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<210>  98
<211>  60
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide EDR3

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<211>  60
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<220>
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<210>  100
<211>  60
<212>  DNA
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<220>
<223>  Oligonucléotide EDR5

<400>  100
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<210>  101
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<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide EDR6

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<210>  102
<211>  26
<212>  DNA
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<220>
<223>  Oligonucléotide C9583

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<210>  103
<211>  26
<212>  DNA
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<220>
<223>  Oligonucléotide C9584

<400>  103
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<210>  104
<211>  33
<212>  DNA
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<213>  Artificial

<220>
<223>  Cicatrice att1

<400>  104
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<210>  105
<211>  34
<212>  DNA
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<220>
<223>  Cicatrice att2

<400>  105
atcggcgcgc ttcgttcggg acgaagaggt agat                                 34


<210>  106
<211>  10325
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  misc_feature
<222>  (3620)..(4069)
<223>  n is a, c, g, or t

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ccgccgtgga ccgcgggcgc ctgtgcgcac agcaggcccc gggagccgag gtcgtgcagc     120

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gcgccgtcgc cgacgacgat gccccggcgg cccaggccgg acagcaggtc ccgggtggcc     900
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ccg acc ctg gga gtc gcc gag gaa ctg gtc gcg cgc ggc cac cgg gtg       96
Pro Thr Leu Gly Val Ala Glu Glu Leu Val Ala Arg Gly His Arg Val
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acg ttc gcg ctg tcc gag gac ctc gcc gag cgg gcc cgg ctg atc ggc      144
Thr Phe Ala Leu Ser Glu Asp Leu Ala Glu Arg Ala Arg Leu Ile Gly
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gcc gag gtg gtc acc tat ccg gtg gac agg caa cgg ttc ctg gac cag      192
Ala Glu Val Val Thr Tyr Pro Val Asp Arg Gln Arg Phe Leu Asp Gln
    50                  55                  60

atg gtg ccg cgg cag gac gcg gac gag tac acg gac gag gac gag ttc      240
Met Val Pro Arg Gln Asp Ala Asp Glu Tyr Thr Asp Glu Asp Glu Phe
65                  70                  75                  80

gtc cgg gtc ctg gag tgg ctg ctg gac atg acg gtg cag acc atg gaa      288
Val Arg Val Leu Glu Trp Leu Leu Asp Met Thr Val Gln Thr Met Glu
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ccg ctg gag agg cac ttc gcc ggg gac cgg ccc gac gtc gtc gtc aac      336
Pro Leu Glu Arg His Phe Ala Gly Asp Arg Pro Asp Val Val Val Asn
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gat ccg tcg tcg ctg tgg acg gga cgg ctg ctg gcg gac cgg tgg ggc      384
Asp Pro Ser Ser Leu Trp Thr Gly Arg Leu Leu Ala Asp Arg Trp Gly
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atc ccg gtc atc cgc agc act ccg acc tat gcc gcc aac gaa cac tgg      432
Ile Pro Val Ile Arg Ser Thr Pro Thr Tyr Ala Ala Asn Glu His Trp
    130                 135                 140

tcg ctg cat ccg ccg gtc gac tcg gcc gag ccg ccg gac gac ccc gag      480
Ser Leu His Pro Pro Val Asp Ser Ala Glu Pro Pro Asp Asp Pro Glu
145                 150                 155                 160

ctg cac aag ctg ctc gcg cgg atc gag cgg ctg ctg gag gag cag ggc      528
Leu His Lys Leu Leu Ala Arg Ile Glu Arg Leu Leu Glu Glu Gln Gly
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gtc gag cac gac ctg gcc ggc ttc acc ggg gtc ctg cac ggc ggt ccg      576
Val Glu His Asp Leu Ala Gly Phe Thr Gly Val Leu His Gly Gly Pro
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His Gly Glu Trp Arg Pro Gly Asp Asp Asp Gly Arg Pro Leu Val Leu
225                 230                 235                 240

gtg agt ctc gga acc ctg tac aac gac cgg ccg gac ttc ttc cgc acc       768
Val Ser Leu Gly Thr Leu Tyr Asn Asp Arg Pro Asp Phe Phe Arg Thr
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tgc ctg gag gcg ttc ggc gac gag ccc tgg aac gtg ctt ctg gtg ctg       816
Cys Leu Glu Ala Phe Gly Asp Glu Pro Trp Asn Val Leu Leu Val Leu
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ggc ggc ggg gtg ccc gcg gcc gac ctg ggc ccg ctt ccc ggc aat gtc       864
Gly Gly Gly Val Pro Ala Ala Asp Leu Gly Pro Leu Pro Gly Asn Val
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cgg gtg acc gac ttc gtg tcg ctg cgc gac gtc ctg ccg cac acg gcg       912
Arg Val Thr Asp Phe Val Ser Leu Arg Asp Val Leu Pro His Thr Ala
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Val Val Val Asn His Gly Gly Met Ser Thr Ala Met Glu Val Phe Ser
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cac ggt gtg ccg gtg gtg gcg atc ccg gtg atg ccg gag ccc cgg gcc      1008
His Gly Val Pro Val Val Ala Ile Pro Val Met Pro Glu Pro Arg Ala
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Thr Ala Arg Arg Ile Val Glu Leu Gly Leu Gly Asp Gln Leu Leu Asn
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Ser Glu Leu Thr Ala Glu Ser Leu Arg Ala Thr Val Arg Arg Val Leu
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Leu His Lys Leu Leu Ala Arg Ile Glu Arg Leu Leu Glu Glu Gln Gly
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Val Glu His Asp Leu Ala Gly Phe Thr Gly Val Leu His Gly Gly Pro
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Val Ser Leu Gly Thr Leu Tyr Asn Asp Arg Pro Asp Phe Phe Arg Thr
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Val Val Val Asn His Gly Gly Met Ser Thr Ala Met Glu Val Phe Ser
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His Gly Val Pro Val Val Ala Ile Pro Val Met Pro Glu Pro Arg Ala
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Thr Ala Arg Arg Ile Val Glu Leu Gly Leu Gly Asp Gln Leu Leu Asn
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atg ctc atc acc gaa aca gca gtg ccc gac gtg ttc cgc atc gat ccg        48
Met Leu Ile Thr Glu Thr Ala Val Pro Asp Val Phe Arg Ile Asp Pro
1               5                   10                  15

gaa ccg ctg ccg gac cac cgg ggc cgg ttc tac gaa gcg gtg cgc cgc        96
Glu Pro Leu Pro Asp His Arg Gly Arg Phe Tyr Glu Ala Val Arg Arg
            20                  25                  30

ggg ccg ctg gag gcc gcc gtc ggg cac tcg gtc gag gtc cgg cag gtc       144
Gly Pro Leu Glu Ala Ala Val Gly His Ser Val Glu Val Arg Gln Val
        35                  40                  45
```

```
cac tgc acc gtc tcc ggg cgc aac gta ctg cgc ggc ctg cac gcc acc      192
His Cys Thr Val Ser Gly Arg Asn Val Leu Arg Gly Leu His Ala Thr
    50                  55                  60

acc ctg ccg ccg ggc cag gcc aag atc ctc acc tgt gtg cgg ggt gcg      240
Thr Leu Pro Pro Gly Gln Ala Lys Ile Leu Thr Cys Val Arg Gly Ala
65                  70                  75                  80

gcg ctg act atg gtg gtc gac atg agg gtc ggg tca ccg ggc ttc gga      288
Ala Leu Thr Met Val Val Asp Met Arg Val Gly Ser Pro Gly Phe Gly
                85                  90                  95

cgg tac gag gcg gtg cgg cag gat gcc ccg tcg ggc acc gcg ctc tac      336
Arg Tyr Glu Ala Val Arg Gln Asp Ala Pro Ser Gly Thr Ala Leu Tyr
            100                 105                 110

ctg ccg gac ggc atc ggc ctg ggc tac gtg gcc ctc gcg gac gac aca      384
Leu Pro Asp Gly Ile Gly Leu Gly Tyr Val Ala Leu Ala Asp Asp Thr
        115                 120                 125

tgc atg aac tac ctg tgc acc gag gag tac gtc ccg ggc atg gtc atc      432
Cys Met Asn Tyr Leu Cys Thr Glu Glu Tyr Val Pro Gly Met Val Ile
    130                 135                 140

gac gtg gac gcc ctg gac ccc gaa ctc ggc ctg ccg tgg gga ctg acc      480
Asp Val Asp Ala Leu Asp Pro Glu Leu Gly Leu Pro Trp Gly Leu Thr
145                 150                 155                 160

ggg gat ccc gtc cgc tcc gcc cgg gac gcg gcg gcg ccg tcc ctg cgg      528
Gly Asp Pro Val Arg Ser Ala Arg Asp Ala Ala Ala Pro Ser Leu Arg
                165                 170                 175

gcg gcc gcg gcg gcg gga att ctg ccc acg tac gag gac tgc tta cgg      576
Ala Ala Ala Ala Ala Gly Ile Leu Pro Thr Tyr Glu Asp Cys Leu Arg
            180                 185                 190

gtg cgc acg tcc gtg ccc gcc cct ccc gac cgg act cgg ctc tga          621
Val Arg Thr Ser Val Pro Ala Pro Pro Asp Arg Thr Arg Leu
        195                 200                 205


<210>  110
<211>  206
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  110

Met Leu Ile Thr Glu Thr Ala Val Pro Asp Val Phe Arg Ile Asp Pro
1               5                   10                  15


Glu Pro Leu Pro Asp His Arg Gly Arg Phe Tyr Glu Ala Val Arg Arg
            20                  25                  30


Gly Pro Leu Glu Ala Ala Val Gly His Ser Val Glu Val Arg Gln Val
        35                  40                  45


His Cys Thr Val Ser Gly Arg Asn Val Leu Arg Gly Leu His Ala Thr
    50                  55                  60
```

```
Thr Leu Pro Pro Gly Gln Ala Lys Ile Leu Thr Cys Val Arg Gly Ala
65                  70                  75                  80


Ala Leu Thr Met Val Val Asp Met Arg Val Gly Ser Pro Gly Phe Gly
                85                  90                  95


Arg Tyr Glu Ala Val Arg Gln Asp Ala Pro Ser Gly Thr Ala Leu Tyr
            100                 105                 110


Leu Pro Asp Gly Ile Gly Leu Gly Tyr Val Ala Leu Ala Asp Asp Thr
        115                 120                 125


Cys Met Asn Tyr Leu Cys Thr Glu Glu Tyr Val Pro Gly Met Val Ile
    130                 135                 140


Asp Val Asp Ala Leu Asp Pro Glu Leu Gly Leu Pro Trp Gly Leu Thr
145                 150                 155                 160


Gly Asp Pro Val Arg Ser Ala Arg Asp Ala Ala Ala Pro Ser Leu Arg
                165                 170                 175


Ala Ala Ala Ala Ala Gly Ile Leu Pro Thr Tyr Glu Asp Cys Leu Arg
            180                 185                 190


Val Arg Thr Ser Val Pro Ala Pro Pro Asp Arg Thr Arg Leu
        195                 200                 205


<210>  111
<211>  960
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(903)

<220>
<221>  misc_feature
<222>  (905)..(960)
<223>  n is a, c, g, or t

<400>  111
atg acc tta cgc acg ctt cga ccc gcc ggc gcg gcg ccc ccc gtg ggt        48
Met Thr Leu Arg Thr Leu Arg Pro Ala Gly Ala Ala Pro Pro Val Gly
1               5                   10                  15

ccc gcc gcg cgg cac gac ttc gac tcg ctc gtc tcc gac gca tgt gcg        96
Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
            20                  25                  30

gag tta ctc ggt tcg ctc cgc cgg gcg gac cag cgc aga aga ggt gag       144
Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
```

```
        35                  40                  45

cag tac ata cgc ggg ctg ctc acg gca cag gga cgc aag acc gcc cgg         192
Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
    50                  55                  60

aac ctc gcc gcc ttc gtc gga gag ggc gcg gcg gaa cag agc ctg cac         240
Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65                  70                  75                  80

cac ttc gtc gcc ggg tcg acc tgg gac tgg ggc gag gtg cgg gcc gcg         288
His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95

ctg gcc cgc tac gtg gac gac agg ctg acc ccc gac gcc tgg gtg atc         336
Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110

tgg ccg atg gtg gtc tcc aag gcg ggg gtg cgc tcc gtc ggg gtg agc         384
Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125

cgg cgc ttc gtc tcc gac ctg ggc cgg gtg gtg agc tgc cag cag agt         432
Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140

cac ggg ctg tgg ctg gcc tcg ggc acg acg gcc gcc ccg gtc agc tgg         480
His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160

cgc ctg acg ctg ggc ggc ggc cgg agc ggg gag ggc aca ccc cgg cac         528
Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
                165                 170                 175

ccc ggc gca ccc ggt gag gag gag aac atc gtc cgc ctg gtg gcc gaa         576
Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
            180                 185                 190

gcc gct cag gcc aac cgc tcc ttg gcc cgc ccc gtg gtg atg gac gca         624
Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205

cgc gcg gcc gtg ctg cca cga ctg gtg cga ggg ctc ggt ctc gcg ggc         672
Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

ctg ccc ttc atg gtg cgg gtg ggc ggg aac ctc cgg ctg gcc tcg gcg         720
Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

agc ggc cgc ggc ccg gtg gac cac cac acg ggg acc acc tcg gcc cag         768
Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255

cag ttg atg gag cag ctc aag cgg ttg agc cgc ccc gtg gag ttg cgg         816
Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270

ggc tcc ctc agc ctc gtc gcc ccg cac ccc gtc gtc ctg ccg ggt gtg         864
Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285

gtc ccg agg cgg acg ctg acg ctg ctg ggg ggt gtg gcg gnnnnnnnnn          913
```

```
Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Gly Val Ala
    290                 295                 300

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnn                     960


<210>  112
<211>  301
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  112

Met Thr Leu Arg Thr Leu Arg Pro Ala Gly Ala Ala Pro Pro Val Gly
1               5                   10                  15


Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
            20                  25                  30


Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
        35                  40                  45


Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
    50                  55                  60


Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65                  70                  75                  80


His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95


Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110


Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125


Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140


His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160


Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
                165                 170                 175


Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
            180                 185                 190


Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205
```

```
Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220


Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240


Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255


Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270


Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285


Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Gly Val Ala
    290                 295                 300


<210>  113
<211>  1008
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1008)

<400>  113
atg cag gca att cgg cat cac gtc atg ctc gtc atg gcc ttc gtg acc        48
Met Gln Ala Ile Arg His His Val Met Leu Val Met Ala Phe Val Thr
1               5                   10                  15

gtc gcc acg act ttc ctt ctc tgg ccg tcg acg caa tcc gcg caa gcg        96
Val Ala Thr Thr Phe Leu Leu Trp Pro Ser Thr Gln Ser Ala Gln Ala
            20                  25                  30

ttt ccc ccg acc ccg aag cag acg gta ctg aac cac ctc cgc gcc att       144
Phe Pro Pro Thr Pro Lys Gln Thr Val Leu Asn His Leu Arg Ala Ile
        35                  40                  45

tcc ggg aat cac atc gtc tcc gga cag cac aac aag gag ccc gcc tcc       192
Ser Gly Asn His Ile Val Ser Gly Gln His Asn Lys Glu Pro Ala Ser
    50                  55                  60

gcc ccg ggc cag tac acc cag cag gtc aag gac gtc acc ggg cag tac       240
Ala Pro Gly Gln Tyr Thr Gln Gln Val Lys Asp Val Thr Gly Gln Tyr
65                  70                  75                  80

ccc ggc ctg tgg ggc ggt gac ctg atg ttc gcc gcg gcg gac gtg gcc       288
Pro Gly Leu Trp Gly Gly Asp Leu Met Phe Ala Ala Ala Asp Val Ala
                85                  90                  95

ggc cgc cag cgc gtc gtc gac cag gcc agg acc gag tgg gcg aac gga       336
Gly Arg Gln Arg Val Val Asp Gln Ala Arg Thr Glu Trp Ala Asn Gly
```

```
            100                 105                 110

tcg ctg gtc tcg ctc acc tgg cac gtc tgc ccg ccg acc ggc ggc agc       384
Ser Leu Val Ser Leu Thr Trp His Val Cys Pro Pro Thr Gly Gly Ser
        115                 120                 125

acc tgt gcg ttc gag ggc ggc gtc aag tcc acg ctg acg aac gcg cag       432
Thr Cys Ala Phe Glu Gly Gly Val Lys Ser Thr Leu Thr Asn Ala Gln
    130                 135                 140

ttc tcg cag gtc ctc acg gag ggc agt gcc ctg aac agc gca tgg aag       480
Phe Ser Gln Val Leu Thr Glu Gly Ser Ala Leu Asn Ser Ala Trp Lys
145                 150                 155                 160

cgg cgc ctg gac gag gtc gtc ccg tac ctg cag cag ctg gag aac gcg       528
Arg Arg Leu Asp Glu Val Val Pro Tyr Leu Gln Gln Leu Glu Asn Ala
                165                 170                 175

ggc gtc ccc gtc ctc ttc cgg ccg ctg cac gag atg aac gaa tcc tgg       576
Gly Val Pro Val Leu Phe Arg Pro Leu His Glu Met Asn Glu Ser Trp
            180                 185                 190

aac tgg tgg gga aac cgg ccc gga gcg aac ggc agc gca cgc ctc tac       624
Asn Trp Trp Gly Asn Arg Pro Gly Ala Asn Gly Ser Ala Arg Leu Tyr
        195                 200                 205

cag atc acc cgc gat cac ctc gcc ggg acg aaa ggg ctg gac aat ctg       672
Gln Ile Thr Arg Asp His Leu Ala Gly Thr Lys Gly Leu Asp Asn Leu
    210                 215                 220

atc tgg gtc tgg aac gtc cag gac aat ccg gcg gga aac tgg aac agc       720
Ile Trp Val Trp Asn Val Gln Asp Asn Pro Ala Gly Asn Trp Asn Ser
225                 230                 235                 240

tac tat ccg gga gat cag tac gtg gac gtc gtt tcg ctg gac gtc tgg       768
Tyr Tyr Pro Gly Asp Gln Tyr Val Asp Val Val Ser Leu Asp Val Trp
                245                 250                 255

tac aag agc cac ccg agt tcc gcc gac tac cag cag atg cgg agc atc       816
Tyr Lys Ser His Pro Ser Ser Ala Asp Tyr Gln Gln Met Arg Ser Ile
            260                 265                 270

gcg gga aca aaa ccc atg gcc ctc gcg gag ctg ggc aaa atg ccg acc       864
Ala Gly Thr Lys Pro Met Ala Leu Ala Glu Leu Gly Lys Met Pro Thr
        275                 280                 285

gcc gcg ctg ctg gac agc cag acg cgg tgg aca tgg ttc atg atg tgg       912
Ala Ala Leu Leu Asp Ser Gln Thr Arg Trp Thr Trp Phe Met Met Trp
    290                 295                 300

tcc gag cat ctg cgc ggg aac aat tcc aac gcc gaa ata cag acg gcg       960
Ser Glu His Leu Arg Gly Asn Asn Ser Asn Ala Glu Ile Gln Thr Ala
305                 310                 315                 320

tat ttc cac ccc cgt gta ctg aac cag ggg gag gtc gca ctg ccc tga     1008
Tyr Phe His Pro Arg Val Leu Asn Gln Gly Glu Val Ala Leu Pro
                325                 330                 335


<210>  114
<211>  335
<212>  PRT
<213>  Streptomyces ambofaciens
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```
<400>  114

Met Gln Ala Ile Arg His His Val Met Leu Val Met Ala Phe Val Thr
1               5                   10                  15

Val Ala Thr Thr Phe Leu Leu Trp Pro Ser Thr Gln Ser Ala Gln Ala
            20                  25                  30

Phe Pro Pro Thr Pro Lys Gln Thr Val Leu Asn His Leu Arg Ala Ile
        35                  40                  45

Ser Gly Asn His Ile Val Ser Gly Gln His Asn Lys Glu Pro Ala Ser
    50                  55                  60

Ala Pro Gly Gln Tyr Thr Gln Gln Val Lys Asp Val Thr Gly Gln Tyr
65                  70                  75                  80

Pro Gly Leu Trp Gly Gly Asp Leu Met Phe Ala Ala Ala Asp Val Ala
                85                  90                  95

Gly Arg Gln Arg Val Val Asp Gln Ala Arg Thr Glu Trp Ala Asn Gly
            100                 105                 110

Ser Leu Val Ser Leu Thr Trp His Val Cys Pro Pro Thr Gly Gly Ser
        115                 120                 125

Thr Cys Ala Phe Glu Gly Gly Val Lys Ser Thr Leu Thr Asn Ala Gln
    130                 135                 140

Phe Ser Gln Val Leu Thr Glu Gly Ser Ala Leu Asn Ser Ala Trp Lys
145                 150                 155                 160

Arg Arg Leu Asp Glu Val Val Pro Tyr Leu Gln Gln Leu Glu Asn Ala
                165                 170                 175

Gly Val Pro Val Leu Phe Arg Pro Leu His Glu Met Asn Glu Ser Trp
            180                 185                 190

Asn Trp Trp Gly Asn Arg Pro Gly Ala Asn Gly Ser Ala Arg Leu Tyr
        195                 200                 205

Gln Ile Thr Arg Asp His Leu Ala Gly Thr Lys Gly Leu Asp Asn Leu
    210                 215                 220

Ile Trp Val Trp Asn Val Gln Asp Asn Pro Ala Gly Asn Trp Asn Ser
225                 230                 235                 240
```

```
Tyr Tyr Pro Gly Asp Gln Tyr Val Asp Val Val Ser Leu Asp Val Trp
                245                 250                 255


Tyr Lys Ser His Pro Ser Ser Ala Asp Tyr Gln Gln Met Arg Ser Ile
            260                 265                 270


Ala Gly Thr Lys Pro Met Ala Leu Ala Glu Leu Gly Lys Met Pro Thr
        275                 280                 285


Ala Ala Leu Leu Asp Ser Gln Thr Arg Trp Thr Trp Phe Met Met Trp
    290                 295                 300


Ser Glu His Leu Arg Gly Asn Asn Ser Asn Ala Glu Ile Gln Thr Ala
305                 310                 315                 320


Tyr Phe His Pro Arg Val Leu Asn Gln Gly Glu Val Ala Leu Pro
                325                 330                 335


<210>  115
<211>  1038
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1038)

<220>
<221>  CDS2
<222>  (190)..(1038)

<400>  115
atg acg tgc ggg ctc ggg cgg gaa cgg ctc cac cgt aga aag gaa gcg        48
Met Thr Cys Gly Leu Gly Arg Glu Arg Leu His Arg Arg Lys Glu Ala
1               5                   10                  15

gtc cgg cgt ccc ggt cca aaa gag cac ggg aaa acc gga ccg atc gcg        96
Val Arg Arg Pro Gly Pro Lys Glu His Gly Lys Thr Gly Pro Ile Ala
            20                  25                  30

cgt ctg tgc cct ggc ggg ccg gct cgt tcc aag ccc tgg tcg cgg ttg       144
Arg Leu Cys Pro Gly Gly Pro Ala Arg Ser Lys Pro Trp Ser Arg Leu
        35                  40                  45

gcc ccc tac ggt ggt acg acc gac gac aag gcg acg ggg gcg acg atg       192
Ala Pro Tyr Gly Gly Thr Thr Asp Asp Lys Ala Thr Gly Ala Thr Met
    50                  55                  60

cgt atc gcg gtg aca ggg gcg gcg ggc agt ctg ggc agg cgg gtg gtg       240
Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val Val
65                  70                  75                  80

cag ctg ctc gcg gac cgg gcc gac gtg gac gtc gtg gcg atg acc agg       288
Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr Arg
                85                  90                  95
```

```
cgg aag ctg cct gcc gag gca cta ccg ccg ggg gtg gag tgc gcc gtc       336
Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala Val
            100                 105                 110

gcc gac tac gcc gac ccg ccc gct ctg cgt gcg gcg ctg aag ggc gtg       384
Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly Val
        115                 120                 125

gac act ctg gtc ctc gtc tcc agc gac ggg ccc gac gca cgg gtg ctg       432
Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val Leu
    130                 135                 140

ctg cac cac cgc aac gtc gtc gcc gcc gtg gtg gcc gag cgc gtc ggc       480
Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val Gly
145                 150                 155                 160

cat gtc gcg gca ctg agc agc gtc gac gcc gac tcg gcc tcc ccg ttc       528
His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro Phe
                165                 170                 175

tgc tac gcc gtc gtc aac cgg ctc acc gag gat ctg ctg ctc gcc tcc       576
Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala Ser
            180                 185                 190

ggc gtg ccg tgc tcg ttc gcc agg gcc tcg ctg tac atc gag ttc ttc       624
Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe Phe
        195                 200                 205

cta ggc tgg ctc acc cag gcg cgc tcg acc ggg ctg ctg agg ctg ccg       672
Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu Pro
    210                 215                 220

gca gcc gat ggc cgg gtg tcc ctg gtg gcg cgc gac gac gtg gcc cgc       720
Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala Arg
225                 230                 235                 240

gcc ctc gcc gcc ctc gcg gtg ggc ggg ccg acc ggc cgt cac cac gac       768
Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His Asp
                245                 250                 255

atc acg gga ccc gag tcg acg gac ctg gca ggc atc gcc tcc acg gcg       816
Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr Ala
            260                 265                 270

gcg gag gtg tgg cgg aca ccg gtc gcc tac gtg gac atc ccg gcc gac       864
Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala Asp
        275                 280                 285

acg tac tct gcc gaa aca gcg gcg acc ggc ctg gat ccc tgg tgg ctc       912
Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp Leu
    290                 295                 300

tac gcc ttc tcc tcc ctg ttc gcc tcg gta cgc gaa cag cgc tgg gat       960
Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp Asp
305                 310                 315                 320

cgg gtc cgc gac gac tgc gcc cag ctc acc ggc cgc ttg ccc cgc act      1008
Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg Thr
                325                 330                 335

ctc cgc gac gtc ctg tca gaa cgc gcg tga                              1038
Leu Arg Asp Val Leu Ser Glu Arg Ala
            340                 345
```

```
<210>  116
<211>  345
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  116

Met Thr Cys Gly Leu Gly Arg Glu Arg Leu His Arg Arg Lys Glu Ala
1               5                   10                  15


Val Arg Arg Pro Gly Pro Lys Glu His Gly Lys Thr Gly Pro Ile Ala
            20                  25                  30


Arg Leu Cys Pro Gly Gly Pro Ala Arg Ser Lys Pro Trp Ser Arg Leu
        35                  40                  45


Ala Pro Tyr Gly Gly Thr Thr Asp Asp Lys Ala Thr Gly Ala Thr Met
    50                  55                  60


Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val Val
65                  70                  75                  80


Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr Arg
                85                  90                  95


Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala Val
            100                 105                 110


Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly Val
        115                 120                 125


Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val Leu
    130                 135                 140


Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val Gly
145                 150                 155                 160


His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro Phe
                165                 170                 175


Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala Ser
            180                 185                 190


Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe Phe
        195                 200                 205


Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu Pro
    210                 215                 220
```

```
Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala Arg
225                 230                 235                 240

Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His Asp
                245                 250                 255

Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr Ala
            260                 265                 270

Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala Asp
        275                 280                 285

Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp Leu
    290                 295                 300

Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp Asp
305                 310                 315                 320

Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg Thr
                325                 330                 335

Leu Arg Asp Val Leu Ser Glu Arg Ala
            340                 345


<210>  117
<211>  282
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  117

Met Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val
1               5                   10                  15

Val Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr
            20                  25                  30

Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
        35                  40                  45

Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
    50                  55                  60

Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65                  70                  75                  80

Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
                85                  90                  95
```

```
Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
            100                 105                 110

Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
        115                 120                 125

Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
    130                 135                 140

Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145                 150                 155                 160

Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
                165                 170                 175

Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
            180                 185                 190

Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
        195                 200                 205

Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
    210                 215                 220

Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240

Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255

Asp Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg
            260                 265                 270

Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
        275                 280

<210>  118
<211>  975
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(975)

<400>  118
atg ctc cga cgc cgt ctc gga ggg ccg tca ggc ccc ctc gtc agt gcc        48
Met Leu Arg Arg Arg Leu Gly Gly Pro Ser Gly Pro Leu Val Ser Ala
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1               5                   10                  15

ctg tgc ctg ggc gcg atg ccc ttc ggc acc acc gtc gac gag aag acg          96
Leu Cys Leu Gly Ala Met Pro Phe Gly Thr Thr Val Asp Glu Lys Thr
            20                  25                  30

tcc ttc gcc atc ctc gac cgg ttc gtc gag gcc ggc ggc agt ctc gtc         144
Ser Phe Ala Ile Leu Asp Arg Phe Val Glu Ala Gly Gly Ser Leu Val
        35                  40                  45

gac acc gcc gac aac tac gcg ttc tgg gct ccc ggc ggg acc ggg gac         192
Asp Thr Ala Asp Asn Tyr Ala Phe Trp Ala Pro Gly Gly Thr Gly Asp
    50                  55                  60

gag agc gag aac acc gtc ggg cgc tgg ctg gcg agc cgc cgc cgc cgc         240
Glu Ser Glu Asn Thr Val Gly Arg Trp Leu Ala Ser Arg Arg Arg Arg
65                  70                  75                  80

gac gag gtg gtg atc tcc acc aag gtg ggt gcc cgc ccc acc gtc ccc         288
Asp Glu Val Val Ile Ser Thr Lys Val Gly Ala Arg Pro Thr Val Pro
                85                  90                  95

ggc agc ggc ctg gag acc gcc gaa ggg ctg tcg gct ccc gtc ata cgg         336
Gly Ser Gly Leu Glu Thr Ala Glu Gly Leu Ser Ala Pro Val Ile Arg
            100                 105                 110

aag gcc gcg gag gac agc ctg cga cgc ctg ggc acc gat cgc atc gat         384
Lys Ala Ala Glu Asp Ser Leu Arg Arg Leu Gly Thr Asp Arg Ile Asp
        115                 120                 125

ctg tac tgg acc cac atc gag gac cgg acc gtc cct ctg gag gag acg         432
Leu Tyr Trp Thr His Ile Glu Asp Arg Thr Val Pro Leu Glu Glu Thr
    130                 135                 140

ctc gga gct ctc gac gag ctg gtc ggc ggc ggc aag gtg gcg gtg ctg         480
Leu Gly Ala Leu Asp Glu Leu Val Gly Gly Gly Lys Val Ala Val Leu
145                 150                 155                 160

ggc tgc tcc aac cac gcg ggc tgg cgc atc gaa cgg gcc cgc gcg ctc         528
Gly Cys Ser Asn His Ala Gly Trp Arg Ile Glu Arg Ala Arg Ala Leu
                165                 170                 175

gcc cgg acc aac ggc tgg acg gcg tac acc tgc gtc cag cag cgc tac         576
Ala Arg Thr Asn Gly Trp Thr Ala Tyr Thr Cys Val Gln Gln Arg Tyr
            180                 185                 190

tcc tac ctt cag ccg cgc ttc gac gtc gga ctg ccg gag agc gga cac         624
Ser Tyr Leu Gln Pro Arg Phe Asp Val Gly Leu Pro Glu Ser Gly His
        195                 200                 205

gtc cac gcg acc tcc gaa ctc ctc gac cac gta cgc agc gag ccc gac         672
Val His Ala Thr Ser Glu Leu Leu Asp His Val Arg Ser Glu Pro Asp
    210                 215                 220

ctg acg ctg ctg gcc tac tcg tcc ctg ctc tcg ggc gcg tac acc cgg         720
Leu Thr Leu Leu Ala Tyr Ser Ser Leu Leu Ser Gly Ala Tyr Thr Arg
225                 230                 235                 240

ccg gac aag acc ctg tcc gcc gcc tac gac cac ccg ggc acc ggg cag         768
Pro Asp Lys Thr Leu Ser Ala Ala Tyr Asp His Pro Gly Thr Gly Gln
                245                 250                 255

cgg ctg acc gtg ctg cgg gag gtg gcc gcc gag ctc ggt gcc acc gcc         816
```

```
Arg Leu Thr Val Leu Arg Glu Val Ala Ala Glu Leu Gly Ala Thr Ala
            260                 265                 270

aac cag gtg gtg ctg tcc tgg ttg ctc gga ggt gat ccg ccg gtg atc       864
Asn Gln Val Val Leu Ser Trp Leu Leu Gly Gly Asp Pro Pro Val Ile
        275                 280                 285

ccg atc gtg ggg gtg agt tcc gtc gag cag ctg gac gag gtg ctg gcc       912
Pro Ile Val Gly Val Ser Ser Val Glu Gln Leu Asp Glu Val Leu Ala
    290                 295                 300

gcc gtc gag ctg gag ctg ccc cgg gag acg agg gca cgg ctg gac ctc       960
Ala Val Glu Leu Glu Leu Pro Arg Glu Thr Arg Ala Arg Leu Asp Leu
305                 310                 315                 320

gcc ggg cgg ggc tga                                                   975
Ala Gly Arg Gly


<210>  119
<211>  324
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  119

Met Leu Arg Arg Arg Leu Gly Gly Pro Ser Gly Pro Leu Val Ser Ala
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Leu Cys Leu Gly Ala Met Pro Phe Gly Thr Thr Val Asp Glu Lys Thr
            20                  25                  30


Ser Phe Ala Ile Leu Asp Arg Phe Val Glu Ala Gly Gly Ser Leu Val
        35                  40                  45


Asp Thr Ala Asp Asn Tyr Ala Phe Trp Ala Pro Gly Gly Thr Gly Asp
    50                  55                  60


Glu Ser Glu Asn Thr Val Gly Arg Trp Leu Ala Ser Arg Arg Arg Arg
65                  70                  75                  80


Asp Glu Val Val Ile Ser Thr Lys Val Gly Ala Arg Pro Thr Val Pro
                85                  90                  95


Gly Ser Gly Leu Glu Thr Ala Glu Gly Leu Ser Ala Pro Val Ile Arg
            100                 105                 110


Lys Ala Ala Glu Asp Ser Leu Arg Arg Leu Gly Thr Asp Arg Ile Asp
        115                 120                 125


Leu Tyr Trp Thr His Ile Glu Asp Arg Thr Val Pro Leu Glu Glu Thr
    130                 135                 140
```

```
Leu Gly Ala Leu Asp Glu Leu Val Gly Gly Gly Lys Val Ala Val Leu
145                 150                 155                 160


Gly Cys Ser Asn His Ala Gly Trp Arg Ile Glu Arg Ala Arg Ala Leu
                165                 170                 175


Ala Arg Thr Asn Gly Trp Thr Ala Tyr Thr Cys Val Gln Gln Arg Tyr
            180                 185                 190


Ser Tyr Leu Gln Pro Arg Phe Asp Val Gly Leu Pro Glu Ser Gly His
        195                 200                 205


Val His Ala Thr Ser Glu Leu Leu Asp His Val Arg Ser Glu Pro Asp
    210                 215                 220


Leu Thr Leu Leu Ala Tyr Ser Ser Leu Leu Ser Gly Ala Tyr Thr Arg
225                 230                 235                 240


Pro Asp Lys Thr Leu Ser Ala Ala Tyr Asp His Pro Gly Thr Gly Gln
                245                 250                 255


Arg Leu Thr Val Leu Arg Glu Val Ala Ala Glu Leu Gly Ala Thr Ala
            260                 265                 270


Asn Gln Val Val Leu Ser Trp Leu Leu Gly Gly Asp Pro Pro Val Ile
        275                 280                 285


Pro Ile Val Gly Val Ser Ser Val Glu Gln Leu Asp Glu Val Leu Ala
    290                 295                 300


Ala Val Glu Leu Glu Leu Pro Arg Glu Thr Arg Ala Arg Leu Asp Leu
305                 310                 315                 320


Ala Gly Arg Gly



<210>  120
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<212>  DNA
<213>  Streptomyces ambofaciens


<220>
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<222>  (1)..(1227)

<400>  120
gtg acg ccc gag gcg gac gtc ggt acg cgg tgg gag ccg gag ttc gac       48
Val Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp
1               5                   10                  15
```

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atg ctg ccc ggc ata ccc gac ctg cgg gcc ttt ccc cgc gga cgg tgg           96
Met Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp
            20                  25                  30

gcg gac gcg gtg cgg gag gcc acc ggc gca ctg acc tgg ggc gag ctc          144
Ala Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu
        35                  40                  45

ggc tac ccc gat ccg gcc ggt ctc gcc cgg ctc cgg cag cgg ctc gcg          192
Gly Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala
    50                  55                  60

gcc tac ctc gtg cgg gga cgc ggc gcg tcg ctg gaa gcc cgg cag ctc          240
Ala Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu
65                  70                  75                  80

gtc gtc tgc gcg ggc acg ctg gac gcg gtg cgc agg ctg tgc cgg gtc          288
Val Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val
                85                  90                  95

ctg cgg acc gag ggc cac acc cac atg gcc ctg gag gac cct ggc tgg          336
Leu Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp
            100                 105                 110

tcg cgg ctg agc gcc acg gtc ggg gcg gag ggg ctg gtg ccc gtc ccg          384
Ser Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro
        115                 120                 125

gtt ccc gtg gac ggc gac ggc ctg cgg gtc gac ctg ctg cgg cgc gcg          432
Val Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala
    130                 135                 140

cct cag gtc cgg tcg gtg atc gtc gct ccc gcc cac cag ttc ccg acc          480
Pro Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr
145                 150                 155                 160

ggt gtg gtc ctc gcc ccg gcc cgt cgc ggc gag ctg gtc gcc tgg gcc          528
Gly Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala
                165                 170                 175

cgc gag gtc gac ggc ctg gtg ctg gag gac gac tac gac gcc gag ttc          576
Arg Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe
            180                 185                 190

cga tac gac cgc cac ccc gtg ggc gcc ctg cag ggc atg gca ccg gag          624
Arg Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu
        195                 200                 205

cac gtc gcg ctg ctg ggg tcg gtc agc aag acg ctc tcg ccg gcc ctg          672
His Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu
    210                 215                 220

cgg atc ggc tgg gcg gtg acc ccg ccg cgc tgg acc gag gcc ctg ggc          720
Arg Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly
225                 230                 235                 240

gcg gag cac gtc ggg ggc gta cca ccg ccc gtc atc gac cag gag gcg          768
Ala Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala
                245                 250                 255

ttc gcc cgg ttc ctg gcc cgc ggg tcc tac gac cgg tac ctg cgg gcg          816
Phe Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala
            260                 265                 270
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gca cgg ctg cgc tac aaa cgg cgc cgc gat cac ctc atg gga gaa ctc         864
Ala Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu
        275                 280                 285

gcg gcg tcg ctg ccg ggg ttc cag gtg tcc ggt gcg gcg gcc ggc ttc         912
Ala Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe
    290                 295                 300

cac ctg ctg ctg tcc ctg acg gac tgc tcg gcg ccc acc gtc gtc agg         960
His Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg
305                 310                 315                 320

gag gcg gcg cgg cgt gac gtg agg ctg gcg gat ctc gac gcc tac cgg        1008
Glu Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg
                325                 330                 335

atg gcg cgg gcc gag cac cac ccg acg gcc cgg gcc ggc gac tcc ggc        1056
Met Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly
            340                 345                 350

ggg gcg cgg gcc gtg gcc gcc gcc ggc ccc gcg ctg gtc ctc ggc tac        1104
Gly Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr
        355                 360                 365

ggc aat ctg gcg gac cac gcc gtg ccc gga gcc gtg cgg cgc ctg gca        1152
Gly Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala
    370                 375                 380

cag gcc atc gac gcg gcc cgg cgc cac gac cgg cgg cac gtc gac gcc        1200
Gln Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala
385                 390                 395                 400

ggg cgg gcc ggg gag cgg gcc gac tga                                    1227
Gly Arg Ala Gly Glu Arg Ala Asp
                405


<210>  121
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<212>  PRT
<213>  Streptomyces ambofaciens

<400>  121

Val Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp
1               5                   10                  15


Met Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp
            20                  25                  30


Ala Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu
        35                  40                  45


Gly Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala
    50                  55                  60


Ala Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu
65                  70                  75                  80
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Val Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val
                85                  90                  95

Leu Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp
            100                 105                 110

Ser Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro
        115                 120                 125

Val Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala
    130                 135                 140

Pro Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr
145                 150                 155                 160

Gly Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala
                165                 170                 175

Arg Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe
            180                 185                 190

Arg Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu
        195                 200                 205

His Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu
    210                 215                 220

Arg Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly
225                 230                 235                 240

Ala Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala
                245                 250                 255

Phe Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala
            260                 265                 270

Ala Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu
        275                 280                 285

Ala Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe
    290                 295                 300

His Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg
305                 310                 315                 320

Glu Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg
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```
                325                 330                 335

Met Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly
            340                 345                 350

Gly Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr
        355                 360                 365

Gly Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala
    370                 375                 380

Gln Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala
385                 390                 395                 400

Gly Arg Ala Gly Glu Arg Ala Asp
                405


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<213>  Artificial

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<212>  DNA
<213>  Artificial

<220>
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<210>  124
<211>  46
<212>  DNA
<213>  Artificial

<220>
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<400>  124
cccaagcttg agaagggagc ggacattcaa tgctttggta aagcac                    46


<210>  125
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<213>  Artificial
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<223>  Oligonucléotide EDR41

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gaaaagatcc gtcatggggt cgtgcgctcc tt                                    32


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cacgacccca tgacggatct tttccgctgc at                                    32


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<220>
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gagccggata tcatcggtct tgccttgctc gt                                    32


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ctgaacgacg ccatcgcggt ggtgc                                              25


<210>  132
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<400>  132
gaccacctcg aaccgtccgg cgtca                                              25


<210>  133
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<220>
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<400>  133
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<210>  134
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<213>  Streptomyces ambofaciens


<220>
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ccgccgtgga ccgcgggcgc ctgtgcgcac agcaggcccc gggagccgag gtcgtgcagc     120

aggccgaggg gcagctcgcc cgtccggtcc cactcggccg cccggtcgcc gaccagcgcg     180

gtgaacagct cctcggcctc ggtgccgtcg gcgtgggagg tgtcagccac ctgcgtgccc     240

ggtcgcctcg ccgggcgcgg ccagccgtcc gaccagccgg accatcgcgt cgacggtgcg     300
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gaagttgtcg agcatcaggt cggcgccgct gatgacgatg ccgtaggtct tctccaggtg 360

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cggccgagcc gccggacgac cccgagctgc acaagctgct cgcgcggatc gagcggctgc 2160

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nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc cgccacaccc   4080
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cccagcagcg tcagcgtccg cctcgggacc acacccggca ggacgacggg gtgcggggcg 4140

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ccc gcc gcg cgg cac gac ttc gac tcg ctc gtc tcc gac gca tgt gcg        96
Pro Ala Ala Arg His Asp Phe Asp Ser Leu Val Ser Asp Ala Cys Ala
            20                  25                  30

gag tta ctc ggt tcg ctc cgc cgg gcg gac cag cgc aga aga ggt gag       144
Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
        35                  40                  45

cag tac ata cgc ggg ctg ctc acg gca cag gga cgc aag acc gcc cgg       192
Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
    50                  55                  60

aac ctc gcc gcc ttc gtc gga gag ggc gcg gcg gaa cag agc ctg cac       240
Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65                  70                  75                  80

cac ttc gtc gcc ggg tcg acc tgg gac tgg ggc gag gtg cgg gcc gcg       288
His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95

ctg gcc cgc tac gtg gac gac agg ctg acc ccc gac gcc tgg gtg atc       336
Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110

tgg ccg atg gtg gtc tcc aag gcg ggg gtg cgc tcc gtc ggg gtg agc       384
Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125

cgg cgc ttc gtc tcc gac ctg ggc cgg gtg gtg agc tgc cag cag agt       432
Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140

cac ggg ctg tgg ctg gcc tcg ggc acg acg gcc gcc ccg gtc agc tgg       480
His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160

cgc ctg acg ctg ggc ggc ggc cgg agc ggg gag ggc aca ccc cgg cac       528
Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
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ccc ggc gca ccc ggt gag gag gag aac atc gtc cgc ctg gtg gcc gaa       576
Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
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            180                 185                 190

gcc gct cag gcc aac cgc tcc ttg gcc cgc ccc gtg gtg atg gac gca      624
Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
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cgc gcg gcc gtg ctg cca cga ctg gtg cga ggg ctc ggt ctc gcg ggc      672
Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

ctg ccc ttc atg gtg cgg gtg ggc ggg aac ctc cgg ctg gcc tcg gcg      720
Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

agc ggc cgc ggc ccg gtg gac cac cac acg ggg acc acc tcg gcc cag      768
Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255

cag ttg atg gag cag ctc aag cgg ttg agc cgc ccc gtg gag ttg cgg      816
Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270

ggc tcc ctc agc ctc gtc gcc ccg cac ccc gtc gtc ctg ccg ggt gtg      864
Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285

gtc ccg agg cgg acg ctg acg ctg ctg ggg gtg tgg cgg ggc aac cgc      912
Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Val Trp Arg Gly Asn Arg
    290                 295                 300

cgg cgc ccc gcc gac ctg tgg ctg acc gac ctc acg tcc tgg gac cgc      960
Arg Arg Pro Ala Asp Leu Trp Leu Thr Asp Leu Thr Ser Trp Asp Arg
305                 310                 315                 320

ggc gcc ctg ctg cgg ctg gcg atg ctc acc gaa cag gtc gac gcc gac     1008
Gly Ala Leu Leu Arg Leu Ala Met Leu Thr Glu Gln Val Asp Ala Asp
                325                 330                 335

ttc gac cgg gtg agc gtg ggc gtg ggc atg cgc gac ttc gaa gga cgg     1056
Phe Asp Arg Val Ser Val Gly Val Gly Met Arg Asp Phe Glu Gly Arg
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tcg ttc cag ggc tgg cac cgg cac gtg acc ctg gcg tcc atc gcc cac     1104
Ser Phe Gln Gly Trp His Arg His Val Thr Leu Ala Ser Ile Ala His
        355                 360                 365

acg ctg cgg ctg gcg cag ccc tcc gcg cgc ggc gac ctc ggt ggg gcg     1152
Thr Leu Arg Leu Ala Gln Pro Ser Ala Arg Gly Asp Leu Gly Gly Ala
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acg gcg gtg tga                                                     1164
Thr Ala Val
385


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Glu Leu Leu Gly Ser Leu Arg Arg Ala Asp Gln Arg Arg Arg Gly Glu
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Gln Tyr Ile Arg Gly Leu Leu Thr Ala Gln Gly Arg Lys Thr Ala Arg
    50                  55                  60

Asn Leu Ala Ala Phe Val Gly Glu Gly Ala Ala Glu Gln Ser Leu His
65                  70                  75                  80

His Phe Val Ala Gly Ser Thr Trp Asp Trp Gly Glu Val Arg Ala Ala
                85                  90                  95

Leu Ala Arg Tyr Val Asp Asp Arg Leu Thr Pro Asp Ala Trp Val Ile
            100                 105                 110

Trp Pro Met Val Val Ser Lys Ala Gly Val Arg Ser Val Gly Val Ser
        115                 120                 125

Arg Arg Phe Val Ser Asp Leu Gly Arg Val Val Ser Cys Gln Gln Ser
    130                 135                 140

His Gly Leu Trp Leu Ala Ser Gly Thr Thr Ala Ala Pro Val Ser Trp
145                 150                 155                 160

Arg Leu Thr Leu Gly Gly Gly Arg Ser Gly Glu Gly Thr Pro Arg His
                165                 170                 175

Pro Gly Ala Pro Gly Glu Glu Glu Asn Ile Val Arg Leu Val Ala Glu
            180                 185                 190

Ala Ala Gln Ala Asn Arg Ser Leu Ala Arg Pro Val Val Met Asp Ala
        195                 200                 205

Arg Ala Ala Val Leu Pro Arg Leu Val Arg Gly Leu Gly Leu Ala Gly
    210                 215                 220

Leu Pro Phe Met Val Arg Val Gly Gly Asn Leu Arg Leu Ala Ser Ala
225                 230                 235                 240

Ser Gly Arg Gly Pro Val Asp His His Thr Gly Thr Thr Ser Ala Gln
                245                 250                 255
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Gln Leu Met Glu Gln Leu Lys Arg Leu Ser Arg Pro Val Glu Leu Arg
            260                 265                 270


Gly Ser Leu Ser Leu Val Ala Pro His Pro Val Val Leu Pro Gly Val
        275                 280                 285


Val Pro Arg Arg Thr Leu Thr Leu Leu Gly Val Trp Arg Gly Asn Arg
    290                 295                 300


Arg Arg Pro Ala Asp Leu Trp Leu Thr Asp Leu Thr Ser Trp Asp Arg
305                 310                 315                 320


Gly Ala Leu Leu Arg Leu Ala Met Leu Thr Glu Gln Val Asp Ala Asp
                325                 330                 335


Phe Asp Arg Val Ser Val Gly Val Gly Met Arg Asp Phe Glu Gly Arg
            340                 345                 350


Ser Phe Gln Gly Trp His Arg His Val Thr Leu Ala Ser Ile Ala His
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Thr Leu Arg Leu Ala Gln Pro Ser Ala Arg Gly Asp Leu Gly Gly Ala
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Thr Ala Val
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Met Arg Ile Ala Val Thr Gly Ala Ala Gly Ser Leu Gly Arg Arg Val
1               5                   10                  15

gtg cag ctg ctc gcg gac cgg gcc gac gtg gac gtc gtg gcg atg acc        96
Val Gln Leu Leu Ala Asp Arg Ala Asp Val Asp Val Val Ala Met Thr
            20                  25                  30

agg cgg aag ctg cct gcc gag gca cta ccg ccg ggg gtg gag tgc gcc       144
Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
        35                  40                  45

gtc gcc gac tac gcc gac ccg ccc gct ctg cgt gcg gcg ctg aag ggc       192
Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
    50                  55                  60
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gtg gac act ctg gtc ctc gtc tcc agc gac ggg ccc gac gca cgg gtg        240
Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65                  70                  75                  80

ctg ctg cac cac cgc aac gtc gtc gcc gcc gtg gtg gcc gag cgc gtc        288
Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
                85                  90                  95

ggc cat gtc gcg gca ctg agc agc gtc gac gcc gac tcg gcc tcc ccg        336
Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
            100                 105                 110

ttc tgc tac gcc gtc gtc aac cgg ctc acc gag gat ctg ctg ctc gcc        384
Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
        115                 120                 125

tcc ggc gtg ccg tgc tcg ttc gcc agg gcc tcg ctg tac atc gag ttc        432
Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
    130                 135                 140

ttc cta ggc tgg ctc acc cag gcg cgc tcg acc ggg ctg ctg agg ctg        480
Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145                 150                 155                 160

ccg gca gcc gat ggc cgg gtg tcc ctg gtg gcg cgc gac gac gtg gcc        528
Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
                165                 170                 175

cgc gcc ctc gcc gcc ctc gcg gtg ggc ggg ccg acc ggc cgt cac cac        576
Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
            180                 185                 190

gac atc acg gga ccc gag tcg acg gac ctg gca ggc atc gcc tcc acg        624
Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
        195                 200                 205

gcg gcg gag gtg tgg cgg aca ccg gtc gcc tac gtg gac atc ccg gcc        672
Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
    210                 215                 220

gac acg tac tct gcc gaa aca gcg gcg acc ggc ctg gat ccc tgg tgg        720
Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240

ctc tac gcc ttc tcc tcc ctg ttc gcc tcg gta cgc gaa cag cgc tgg        768
Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255

gat cgg gtc cgc gac gac tgc gcc cag ctc acc ggc cgc ttg ccc cgc        816
Asp Arg Val Arg Asp Asp Cys Ala Gln Leu Thr Gly Arg Leu Pro Arg
            260                 265                 270

act ctc cgc gac gtc ctg tca gaa cgc gcg tga                            849
Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
        275                 280


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<213>  Streptomyces ambofaciens

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Arg Arg Lys Leu Pro Ala Glu Ala Leu Pro Pro Gly Val Glu Cys Ala
        35                  40                  45


Val Ala Asp Tyr Ala Asp Pro Pro Ala Leu Arg Ala Ala Leu Lys Gly
    50                  55                  60


Val Asp Thr Leu Val Leu Val Ser Ser Asp Gly Pro Asp Ala Arg Val
65                  70                  75                  80


Leu Leu His His Arg Asn Val Val Ala Ala Val Val Ala Glu Arg Val
                85                  90                  95


Gly His Val Ala Ala Leu Ser Ser Val Asp Ala Asp Ser Ala Ser Pro
            100                 105                 110


Phe Cys Tyr Ala Val Val Asn Arg Leu Thr Glu Asp Leu Leu Leu Ala
        115                 120                 125


Ser Gly Val Pro Cys Ser Phe Ala Arg Ala Ser Leu Tyr Ile Glu Phe
    130                 135                 140


Phe Leu Gly Trp Leu Thr Gln Ala Arg Ser Thr Gly Leu Leu Arg Leu
145                 150                 155                 160


Pro Ala Ala Asp Gly Arg Val Ser Leu Val Ala Arg Asp Asp Val Ala
                165                 170                 175


Arg Ala Leu Ala Ala Leu Ala Val Gly Gly Pro Thr Gly Arg His His
            180                 185                 190


Asp Ile Thr Gly Pro Glu Ser Thr Asp Leu Ala Gly Ile Ala Ser Thr
        195                 200                 205


Ala Ala Glu Val Trp Arg Thr Pro Val Ala Tyr Val Asp Ile Pro Ala
    210                 215                 220


Asp Thr Tyr Ser Ala Glu Thr Ala Ala Thr Gly Leu Asp Pro Trp Trp
225                 230                 235                 240


Leu Tyr Ala Phe Ser Ser Leu Phe Ala Ser Val Arg Glu Gln Arg Trp
                245                 250                 255
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Thr Leu Arg Asp Val Leu Ser Glu Arg Ala
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<222>  (1)..(1512)

<400>  145
gtg ggc gac gac cgg acc gac ccg gca tgg gga acc ttt ctc gaa ctg        48
Val Gly Asp Asp Arg Thr Asp Pro Ala Trp Gly Thr Phe Leu Glu Leu
1               5                   10                  15

ggc ggg ccg gcg gac ggc ccg ctg cac gtc cgg ctg agc cgt gcc ctg        96
Gly Gly Pro Ala Asp Gly Pro Leu His Val Arg Leu Ser Arg Ala Leu
            20                  25                  30

cgg gcg gcg gtg acc ggt ggg cgg atc gcc tcc ggc agc gcg ctg ccg       144
Arg Ala Ala Val Thr Gly Gly Arg Ile Ala Ser Gly Ser Ala Leu Pro
        35                  40                  45

ccg agc agg gcg ctg gcg gcg gac ctg ggc tgc tcg cgg tgg gtg gtg       192
Pro Ser Arg Ala Leu Ala Ala Asp Leu Gly Cys Ser Arg Trp Val Val
    50                  55                  60

acg gag gcc tac gcg cag ctc gtc gcg gag ggg tac ctg gag gcg cgc       240
Thr Glu Ala Tyr Ala Gln Leu Val Ala Glu Gly Tyr Leu Glu Ala Arg
65                  70                  75                  80

agc ggc tcg gcc acc cgg gtc agg gcg cag gcc gtc ccc gct ccg gtg       288
Ser Gly Ser Ala Thr Arg Val Arg Ala Gln Ala Val Pro Ala Pro Val
                85                  90                  95

acg ccc gag gcg gac gtc ggt acg cgg tgg gag ccg gag ttc gac atg       336
Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp Met
            100                 105                 110

ctg ccc ggc ata ccc gac ctg cgg gcc ttt ccc cgc gga cgg tgg gcg       384
Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp Ala
        115                 120                 125

gac gcg gtg cgg gag gcc acc ggc gca ctg acc tgg ggc gag ctc ggc       432
Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu Gly
    130                 135                 140

tac ccc gat ccg gcc ggt ctc gcc cgg ctc cgg cag cgg ctc gcg gcc       480
Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala Ala
145                 150                 155                 160

tac ctc gtg cgg gga cgc ggc gcg tcg ctg gaa gcc cgg cag ctc gtc       528
Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu Val
```

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                165                 170                 175

gtc tgc gcg ggc acg ctg gac gcg gtg cgc agg ctg tgc cgg gtc ctg          576
Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val Leu
            180                 185                 190

cgg acc gag ggc cac acc cac atg gcc ctg gag gac cct ggc tgg tcg          624
Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp Ser
        195                 200                 205

cgg ctg agc gcc acg gtc ggg gcg gag ggg ctg gtg ccc gtc ccg gtt          672
Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro Val
    210                 215                 220

ccc gtg gac ggc gac ggc ctg cgg gtc gac ctg ctg cgg cgc gcg cct          720
Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala Pro
225                 230                 235                 240

cag gtc cgg tcg gtg atc gtc gct ccc gcc cac cag ttc ccg acc ggt          768
Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr Gly
                245                 250                 255

gtg gtc ctc gcc ccg gcc cgt cgc ggc gag ctg gtc gcc tgg gcc cgc          816
Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala Arg
            260                 265                 270

gag gtc gac ggc ctg gtg ctg gag gac gac tac gac gcc gag ttc cga          864
Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe Arg
        275                 280                 285

tac gac cgc cac ccc gtg ggc gcc ctg cag ggc atg gca ccg gag cac          912
Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu His
    290                 295                 300

gtc gcg ctg ctg ggg tcg gtc agc aag acg ctc tcg ccg gcc ctg cgg          960
Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu Arg
305                 310                 315                 320

atc ggc tgg gcg gtg acc ccg ccg cgc tgg acc gag gcc ctg ggc gcg         1008
Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly Ala
                325                 330                 335

gag cac gtc ggg ggc gta cca ccg ccc gtc atc gac cag gag gcg ttc         1056
Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala Phe
            340                 345                 350

gcc cgg ttc ctg gcc cgc ggg tcc tac gac cgg tac ctg cgg gcg gca         1104
Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala Ala
        355                 360                 365

cgg ctg cgc tac aaa cgg cgc cgc gat cac ctc atg gga gaa ctc gcg         1152
Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu Ala
    370                 375                 380

gcg tcg ctg ccg ggg ttc cag gtg tcc ggt gcg gcg gcc ggc ttc cac         1200
Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe His
385                 390                 395                 400

ctg ctg ctg tcc ctg acg gac tgc tcg gcg ccc acc gtc gtc agg gag         1248
Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg Glu
                405                 410                 415

gcg gcg cgg cgt gac gtg agg ctg gcg gat ctc gac gcc tac cgg atg         1296
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```
Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg Met
            420                 425                 430

gcg cgg gcc gag cac cac ccg acg gcc cgg gcc ggc gac tcc ggc ggg         1344
Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly Gly
        435                 440                 445

gcg cgg gcc gtg gcc gcc gcc ggc ccc gcg ctg gtc ctc ggc tac ggc         1392
Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr Gly
    450                 455                 460

aat ctg gcg gac cac gcc gtg ccc gga gcc gtg cgg cgc ctg gca cag         1440
Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala Gln
465                 470                 475                 480

gcc atc gac gcg gcc cgg cgc cac gac cgg cgg cac gtc gac gcc ggg         1488
Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala Gly
                485                 490                 495

cgg gcc ggg gag cgg gcc gac tga                                         1512
Arg Ala Gly Glu Arg Ala Asp
            500


<210>  146
<211>  503
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  146

Val Gly Asp Asp Arg Thr Asp Pro Ala Trp Gly Thr Phe Leu Glu Leu
1               5                   10                  15


Gly Gly Pro Ala Asp Gly Pro Leu His Val Arg Leu Ser Arg Ala Leu
            20                  25                  30


Arg Ala Ala Val Thr Gly Gly Arg Ile Ala Ser Gly Ser Ala Leu Pro
        35                  40                  45


Pro Ser Arg Ala Leu Ala Ala Asp Leu Gly Cys Ser Arg Trp Val Val
    50                  55                  60


Thr Glu Ala Tyr Ala Gln Leu Val Ala Glu Gly Tyr Leu Glu Ala Arg
65                  70                  75                  80


Ser Gly Ser Ala Thr Arg Val Arg Ala Gln Ala Val Pro Ala Pro Val
                85                  90                  95


Thr Pro Glu Ala Asp Val Gly Thr Arg Trp Glu Pro Glu Phe Asp Met
            100                 105                 110


Leu Pro Gly Ile Pro Asp Leu Arg Ala Phe Pro Arg Gly Arg Trp Ala
        115                 120                 125
```

```
Asp Ala Val Arg Glu Ala Thr Gly Ala Leu Thr Trp Gly Glu Leu Gly
    130                 135                 140

Tyr Pro Asp Pro Ala Gly Leu Ala Arg Leu Arg Gln Arg Leu Ala Ala
145                 150                 155                 160

Tyr Leu Val Arg Gly Arg Gly Ala Ser Leu Glu Ala Arg Gln Leu Val
                165                 170                 175

Val Cys Ala Gly Thr Leu Asp Ala Val Arg Arg Leu Cys Arg Val Leu
            180                 185                 190

Arg Thr Glu Gly His Thr His Met Ala Leu Glu Asp Pro Gly Trp Ser
        195                 200                 205

Arg Leu Ser Ala Thr Val Gly Ala Glu Gly Leu Val Pro Val Pro Val
    210                 215                 220

Pro Val Asp Gly Asp Gly Leu Arg Val Asp Leu Leu Arg Arg Ala Pro
225                 230                 235                 240

Gln Val Arg Ser Val Ile Val Ala Pro Ala His Gln Phe Pro Thr Gly
                245                 250                 255

Val Val Leu Ala Pro Ala Arg Arg Gly Glu Leu Val Ala Trp Ala Arg
            260                 265                 270

Glu Val Asp Gly Leu Val Leu Glu Asp Asp Tyr Asp Ala Glu Phe Arg
        275                 280                 285

Tyr Asp Arg His Pro Val Gly Ala Leu Gln Gly Met Ala Pro Glu His
    290                 295                 300

Val Ala Leu Leu Gly Ser Val Ser Lys Thr Leu Ser Pro Ala Leu Arg
305                 310                 315                 320

Ile Gly Trp Ala Val Thr Pro Pro Arg Trp Thr Glu Ala Leu Gly Ala
                325                 330                 335

Glu His Val Gly Gly Val Pro Pro Pro Val Ile Asp Gln Glu Ala Phe
            340                 345                 350

Ala Arg Phe Leu Ala Arg Gly Ser Tyr Asp Arg Tyr Leu Arg Ala Ala
        355                 360                 365

Arg Leu Arg Tyr Lys Arg Arg Arg Asp His Leu Met Gly Glu Leu Ala
    370                 375                 380
```

```
Ala Ser Leu Pro Gly Phe Gln Val Ser Gly Ala Ala Ala Gly Phe His
385                 390                 395                 400


Leu Leu Leu Ser Leu Thr Asp Cys Ser Ala Pro Thr Val Val Arg Glu
                405                 410                 415


Ala Ala Arg Arg Asp Val Arg Leu Ala Asp Leu Asp Ala Tyr Arg Met
            420                 425                 430


Ala Arg Ala Glu His His Pro Thr Ala Arg Ala Gly Asp Ser Gly Gly
        435                 440                 445


Ala Arg Ala Val Ala Ala Ala Gly Pro Ala Leu Val Leu Gly Tyr Gly
    450                 455                 460


Asn Leu Ala Asp His Ala Val Pro Gly Ala Val Arg Arg Leu Ala Gln
465                 470                 475                 480


Ala Ile Asp Ala Ala Arg Arg His Asp Arg Arg His Val Asp Ala Gly
                485                 490                 495


Arg Ala Gly Glu Arg Ala Asp
            500


<210>  147
<211>  276
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(276)

<400>  147
gtg gcg gag acg gac cgg cat ctc gac cag cgg ctg gag cag gcc atc       48
Val Ala Glu Thr Asp Arg His Leu Asp Gln Arg Leu Glu Gln Ala Ile
1               5                   10                  15

atg gac ctg ctg gag cga cgg gcg gcc act gcc tcg atc tgt ccg tcc       96
Met Asp Leu Leu Glu Arg Arg Ala Ala Thr Ala Ser Ile Cys Pro Ser
            20                  25                  30

gac gcc gcg cgt cgg gtc cac gag ggt gac gac gag ggc tgg cga gcc      144
Asp Ala Ala Arg Arg Val His Glu Gly Asp Asp Glu Gly Trp Arg Ala
        35                  40                  45

ctg ctg gaa ccc gcg cgc cga gcg gcc tgg cgt ctg gtg ggg tcc ggc      192
Leu Leu Glu Pro Ala Arg Arg Ala Ala Trp Arg Leu Val Gly Ser Gly
    50                  55                  60

gag gtc gag gtg acc cag gcc ggc cgg ccc gtc acg cag gcc gag gcc      240
Glu Val Glu Val Thr Gln Ala Gly Arg Pro Val Thr Gln Ala Glu Ala
65                  70                  75                  80
```

```
cgc ggg ccc gtc cgc att cgt cgg gcg ggt tcc tga                      276
Arg Gly Pro Val Arg Ile Arg Arg Ala Gly Ser
                85                  90


<210>  148
<211>  91
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  148

Val Ala Glu Thr Asp Arg His Leu Asp Gln Arg Leu Glu Gln Ala Ile
1               5                   10                  15


Met Asp Leu Leu Glu Arg Arg Ala Ala Thr Ala Ser Ile Cys Pro Ser
            20                  25                  30


Asp Ala Ala Arg Arg Val His Glu Gly Asp Asp Glu Gly Trp Arg Ala
        35                  40                  45


Leu Leu Glu Pro Ala Arg Arg Ala Ala Trp Arg Leu Val Gly Ser Gly
    50                  55                  60


Glu Val Glu Val Thr Gln Ala Gly Arg Pro Val Thr Gln Ala Glu Ala
65                  70                  75                  80


Arg Gly Pro Val Arg Ile Arg Arg Ala Gly Ser
                85                  90


<210>  149
<211>  1236
<212>  DNA
<213>  Streptomyces ambofaciens


<220>
<221>  CDS
<222>  (1)..(1236)

<400>  149
ctg cag ata tac gac tgc tgg ggc ggg agc aat cag cag tgg acg ttg       48
Leu Gln Ile Tyr Asp Cys Trp Gly Gly Ser Asn Gln Gln Trp Thr Leu
1               5                   10                  15

acg gac gac cgt cgg ctg acc gtg tac ggc aac aag tgc ctg gac gtt       96
Thr Asp Asp Arg Arg Leu Thr Val Tyr Gly Asn Lys Cys Leu Asp Val
            20                  25                  30

ccg ggt cac gcc acc aca ccc ggg acg cgg gtg cag atc tgg agc tgt      144
Pro Gly His Ala Thr Thr Pro Gly Thr Arg Val Gln Ile Trp Ser Cys
        35                  40                  45

tcc ggc ggt gcg aac cag cag tgg cgg gtg aac tcc gac ggc acg gtc      192
Ser Gly Gly Ala Asn Gln Gln Trp Arg Val Asn Ser Asp Gly Thr Val
    50                  55                  60
```

```
gtc ggc gtg gag tcc ggg ctg tgc ctg gag gcc gcg ggc gcc ggt acg        240
Val Gly Val Glu Ser Gly Leu Cys Leu Glu Ala Ala Gly Ala Gly Thr
65                  70                  75                  80

gcc aac ggc acg gcg gtg cag atc ggg acg tgc gtc ggt ggc agc ggg        288
Ala Asn Gly Thr Ala Val Gln Ile Gly Thr Cys Val Gly Gly Ser Gly
                85                  90                  95

cag aag tgg tcc ggc ctg acc ggg acg ccc ccg acg gac ggg gcg tgt        336
Gln Lys Trp Ser Gly Leu Thr Gly Thr Pro Pro Thr Asp Gly Ala Cys
            100                 105                 110

gcc ctt ccg tcg gcg tac cgg tgg tcg tcg acg ggt gtg ctg gcg cag        384
Ala Leu Pro Ser Ala Tyr Arg Trp Ser Ser Thr Gly Val Leu Ala Gln
        115                 120                 125

ccg gcg aac ggg tgg gcg gcg gtc aag gac ttc acc acc gtg acc cac        432
Pro Ala Asn Gly Trp Ala Ala Val Lys Asp Phe Thr Thr Val Thr His
    130                 135                 140

aac ggc aag cac ctg gtc tac gcg tcg aac gtg tcg ggg tcg tcc tac        480
Asn Gly Lys His Leu Val Tyr Ala Ser Asn Val Ser Gly Ser Ser Tyr
145                 150                 155                 160

ggc tcg atg atg ttc agc ccc ttc acg aac tgg tcg gac atg gcg tcg        528
Gly Ser Met Met Phe Ser Pro Phe Thr Asn Trp Ser Asp Met Ala Ser
                165                 170                 175

gcc ggc cag acc ggg atg agt cag gcg gcg gtg gcg ccc acc ctg ttc        576
Ala Gly Gln Thr Gly Met Ser Gln Ala Ala Val Ala Pro Thr Leu Phe
            180                 185                 190

tac ttc gcg ccc aag aac gtc tgg gtg ctg gcg tac cag tgg ggc gcg        624
Tyr Phe Ala Pro Lys Asn Val Trp Val Leu Ala Tyr Gln Trp Gly Ala
        195                 200                 205

tgg ccc ttc gtc tac cgc acg tcc agc gac ccg gcc aac ccc aac ggc        672
Trp Pro Phe Val Tyr Arg Thr Ser Ser Asp Pro Ala Asn Pro Asn Gly
    210                 215                 220

tgg tcg gct ccg cag ccg ttg ttc acc ggg agc atc tca gga tcc gac        720
Trp Ser Ala Pro Gln Pro Leu Phe Thr Gly Ser Ile Ser Gly Ser Asp
225                 230                 235                 240

acc ggc ccg atc gac cag acc ctg atc gcc gac gga cag aac atg tac        768
Thr Gly Pro Ile Asp Gln Thr Leu Ile Ala Asp Gly Gln Asn Met Tyr
                245                 250                 255

ctg ttc ttc gcc ggt gac aac ggc aag atc tac cgg gcg agc atg ccg        816
Leu Phe Phe Ala Gly Asp Asn Gly Lys Ile Tyr Arg Ala Ser Met Pro
            260                 265                 270

atc ggg aac ttc ccg ggc agc ttc ggc tcg tcg tac acg acg atc atg        864
Ile Gly Asn Phe Pro Gly Ser Phe Gly Ser Ser Tyr Thr Thr Ile Met
        275                 280                 285

agc gac acg aag gcc aac ctg ttc gag ggc gtg cag gtc tac aag gtt        912
Ser Asp Thr Lys Ala Asn Leu Phe Glu Gly Val Gln Val Tyr Lys Val
    290                 295                 300

cag ggc cag aac cag tac ctg atg atc gtc gag gcg atg ggc gcg aac        960
Gln Gly Gln Asn Gln Tyr Leu Met Ile Val Glu Ala Met Gly Ala Asn
```

```
305                 310                 315                 320

gga cgc tac ttc cgt tcc ttc acg gcc tcc agc ctg agc ggc tcg tgg       1008
Gly Arg Tyr Phe Arg Ser Phe Thr Ala Ser Ser Leu Ser Gly Ser Trp
                325                 330                 335

acc ccg cag gcc gcg agc gag agc aac ccc ttc gcg ggc aag gcc aac       1056
Thr Pro Gln Ala Ala Ser Glu Ser Asn Pro Phe Ala Gly Lys Ala Asn
            340                 345                 350

agc ggg gcc acc tgg acc aac gac atc agc cac ggt gac ctg gtc cgc       1104
Ser Gly Ala Thr Trp Thr Asn Asp Ile Ser His Gly Asp Leu Val Arg
        355                 360                 365

gac aac ccc gac cag acc atg acc gtc gac ccc tgc aac ctg cgg ttc       1152
Asp Asn Pro Asp Gln Thr Met Thr Val Asp Pro Cys Asn Leu Arg Phe
    370                 375                 380

ctc tac cag ggc aag tca ccc acc gcg ggc ggc ccc tac gac cag ctg       1200
Leu Tyr Gln Gly Lys Ser Pro Thr Ala Gly Gly Pro Tyr Asp Gln Leu
385                 390                 395                 400

ccg tgg cgg ccg ggt gtg ctc acc ctg cgg cgc tga                       1236
Pro Trp Arg Pro Gly Val Leu Thr Leu Arg Arg
                405                 410


<210>  150
<211>  411
<212>  PRT
<213>  Streptomyces ambofaciens

<400>  150

Leu Gln Ile Tyr Asp Cys Trp Gly Gly Ser Asn Gln Gln Trp Thr Leu
1               5                   10                  15


Thr Asp Asp Arg Arg Leu Thr Val Tyr Gly Asn Lys Cys Leu Asp Val
            20                  25                  30


Pro Gly His Ala Thr Thr Pro Gly Thr Arg Val Gln Ile Trp Ser Cys
        35                  40                  45


Ser Gly Gly Ala Asn Gln Gln Trp Arg Val Asn Ser Asp Gly Thr Val
    50                  55                  60


Val Gly Val Glu Ser Gly Leu Cys Leu Glu Ala Ala Gly Ala Gly Thr
65                  70                  75                  80


Ala Asn Gly Thr Ala Val Gln Ile Gly Thr Cys Val Gly Gly Ser Gly
                85                  90                  95


Gln Lys Trp Ser Gly Leu Thr Gly Thr Pro Pro Thr Asp Gly Ala Cys
            100                 105                 110


Ala Leu Pro Ser Ala Tyr Arg Trp Ser Ser Thr Gly Val Leu Ala Gln
```

```
        115                 120                 125


Pro Ala Asn Gly Trp Ala Ala Val Lys Asp Phe Thr Thr Val Thr His
    130                 135                 140


Asn Gly Lys His Leu Val Tyr Ala Ser Asn Val Ser Gly Ser Ser Tyr
145                 150                 155                 160


Gly Ser Met Met Phe Ser Pro Phe Thr Asn Trp Ser Asp Met Ala Ser
                165                 170                 175


Ala Gly Gln Thr Gly Met Ser Gln Ala Ala Val Ala Pro Thr Leu Phe
            180                 185                 190


Tyr Phe Ala Pro Lys Asn Val Trp Val Leu Ala Tyr Gln Trp Gly Ala
        195                 200                 205


Trp Pro Phe Val Tyr Arg Thr Ser Ser Asp Pro Ala Asn Pro Asn Gly
    210                 215                 220


Trp Ser Ala Pro Gln Pro Leu Phe Thr Gly Ser Ile Ser Gly Ser Asp
225                 230                 235                 240


Thr Gly Pro Ile Asp Gln Thr Leu Ile Ala Asp Gly Gln Asn Met Tyr
                245                 250                 255


Leu Phe Phe Ala Gly Asp Asn Gly Lys Ile Tyr Arg Ala Ser Met Pro
            260                 265                 270


Ile Gly Asn Phe Pro Gly Ser Phe Gly Ser Ser Tyr Thr Thr Ile Met
        275                 280                 285


Ser Asp Thr Lys Ala Asn Leu Phe Glu Gly Val Gln Val Tyr Lys Val
    290                 295                 300


Gln Gly Gln Asn Gln Tyr Leu Met Ile Val Glu Ala Met Gly Ala Asn
305                 310                 315                 320


Gly Arg Tyr Phe Arg Ser Phe Thr Ala Ser Ser Leu Ser Gly Ser Trp
                325                 330                 335


Thr Pro Gln Ala Ala Ser Glu Ser Asn Pro Phe Ala Gly Lys Ala Asn
            340                 345                 350


Ser Gly Ala Thr Trp Thr Asn Asp Ile Ser His Gly Asp Leu Val Arg
        355                 360                 365
```

```
Asp Asn Pro Asp Gln Thr Met Thr Val Asp Pro Cys Asn Leu Arg Phe
    370                 375                 380


Leu Tyr Gln Gly Lys Ser Pro Thr Ala Gly Gly Pro Tyr Asp Gln Leu
385                 390                 395                 400


Pro Trp Arg Pro Gly Val Leu Thr Leu Arg Arg
                405                 410


<210>  151
<211>  22
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide KF36

<400>  151
ttgccgtagc cgaggaccag cg                                              22


<210>  152
<211>  22
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide KF37

<400>  152
cacatggccc tggaggaccc tg                                              22


<210>  153
<211>  30
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide KF42

<400>  153
aagcttgtac ggcccacaga atgatgtcac                                      30


<210>  154
<211>  30
<212>  DNA
<213>  Artificial

<220>
<223>  Oligonucléotide KF43

<400>  154
aagcttcgac taccttggtg atctcgcctt                                      30


<210>  155
<211>  65
<212>  DNA
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<213> Artificial

<220>
<223> Oligonucléotide KF32

<400> 155
caaccgcttg agctgctcca tcaactgctg ggccgaggta tcgcgcgcgc ttcgttcggg   60

acgaa   65

<210> 156
<211> 65
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide KF33

<400> 156
tgggtcccgc cgcgcggcac gacttcgact cgctcgtcta tctgcctctt cgtcccgaag   60

caact   65

<210> 157
<211> 65
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide EDR71

<400> 157
cgtcatcgac gtgcggggaa gacagaggtg ataccgatga tcgcgcgcgc ttcgttcggg   60

acgaa   65

<210> 158
<211> 65
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide EDR72

<400> 158
gccagcacct cgtccagctg ctcgacggaa ctcacccccca tctgcctctt cgtcccgaag   60

caact   65

<210> 159
<211> 66
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide KF52

<400> 159
gatccgccag cctcacgtca cgccgcgccg cctccctgac atcgcgcgcg cttcgttcgg   60

gacgaa 66

<210> 160
<211> 66
<212> DNA
<213> Artificial

<220>
<223> Oligonucléotide KF53

<400> 160
gaggcggacg tcggtacgcg gtgggagccg gagttcgaca atctgcctct tcgtcccgaa 60

gcaact 66

<210> 161
<211> 2540
<212> DNA
<213> Streptomyces ambofaciens

<400> 161
ctgcagggcg cccacggggt ggcggtcgta tcggaactcg gcgtcgtagt cgtcctccag 60

caccaggccg tcgacctcgc gggcccaggc gaccagctcg ccgcgacggg ccggggcgag 120

gaccacaccg gtcgggaact ggtgggcggg agcgacgatc accgaccgga cctgaggcgc 180

gcgccgcagc aggtcgaccc gcaggccgtc gccgtccacg ggaaccggga cgggcaccag 240

cccctccgcc ccgaccgtgg cgctcagccg cgaccagcca gggtcctcca gggccatgtg 300

ggtgtggccc tcggtccgca ggacccggca cagcctgcgc accgcgtcca gcgtgcccgc 360

gcagacgacg agctgccggg cttccagcga cgcgccgcgt ccccgcacga ggtaggccgc 420

gagccgctgc cggagccggg cgagaccggc cggatcgggg tagccgagct cgccccaggt 480

cagtgcgccg gtggcctccc gcaccgcgtc cgcccaccgt ccgcggggaa aggcccgcag 540

gtcgggtatg ccgggcagca tgtcgaactc cggctcccac cgcgtaccga cgtccgcctc 600

gggcgtcacc ggagcgggga cggcctgcgc cctgacccgg gtggccgagc cgctgcgcgc 660

ctccaggtac ccctccgcga cgagctgcgc gtaggcctcc gtcaccaccc accgcgagca 720

gcccaggtcc gccgccagcg ccctgctcgg cggcagcgcg ctgccggagg cgatccgccc 780

accggtcacc gccgcccgca gggcacggct cagccggacg tgcagcgggc cgtccgccgg 840

cccgcccagt tcgagaaagg ttccccatgc cgggtcggtc cggtcgtcgc ccacggcagc 900

cgatgctacc caccgccccg cgacggccgg gcggcggcgt ccacgggccc ggtgcacact 960

ggatggcgtg gcggagacgg accggcatct cgaccagcgg ctggagcagg ccatcatgga 1020

cctgctggag cgacgggcgg ccactgcctc gatctgtccg tccgacgccg cgcgtcgggt 1080

ccacgagggt gacgacgagg gctggcgagc cctgctggaa cccgcgcgcc gagcggcctg 1140

gcgtctggtg gggtccggcg aggtcgaggt gacccaggcc ggccggcccg tcacgcaggc 1200 cgaggcccgc gggcccgtcc gcattcgtcg ggcgggttcc tgacggctcg atccgaaggc 1260

ggaactcccg tgccccggcg gcacgggagc tcgacgccgg gaggtcagcg ccgcagggtg 1320

agcacacccg gccgccacgg cagctggtcg taggggccgc ccgcggtggg tgacttgccc 1380

tggtagagga accgcaggtt gcaggggtcg acggtcatgg tctggtcggg gttgtcgcgg 1440

accaggtcac cgtggctgat gtcgttggtc caggtggccc cgctgttggc cttgcccgcg 1500

aaggggttgc tctcgctcgc ggcctgcggg gtccacgagc cgctcaggct ggaggccgtg 1560

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